

JSC NEWS RELEASE LOG 1989

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NASA NEWS

National Aeronautics and
Space Administration
Lyndon B. Johnson Space Center
Houston Texas 77058
AC 713 483-5111

For Release

Jeffrey E. Carr

January 4, 1989
11:00 CST

RELEASE NO. 89-01

NOTE TO EDITORS: STS-29 BACKGROUND BRIEFINGS AT JSC

A series of pre-flight background briefings and a press conference with the STS-29 astronaut crew are scheduled for January 11 at the Johnson Space Center in Houston.

Background briefings will include an overview of the flight given by lead flight director Charles W. Shaw as well as briefings on the primary payload, TDRS-D, secondary payloads, and other mission objectives.

The briefings will begin at 8 a.m. CST and should be completed by 4 p.m. Round robin interviews with the flight crew will be conducted the following day. News media who wish to participate in the interviews should contact Jeffrey Carr at 713/483-5111.

All briefings and the crew press conference will be carried live on NASA Select television which can be accessed via Satcom F2R, transponder 13, at 72 degrees west longitude. Two-way question and answer capability with other NASA centers will be provided.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
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For Release

RELEASE No. 89-002

Kari Fluegel
Johnson Space Center
(713) 483-5111

Feb. 6, 1989
Immediate

JSC AWARDS WHITE SANDS SITE SERVICES CONTRACT TO LOCKHEED

NASA's Lyndon B. Johnson Space Center has awarded a new contract to Lockheed Engineering and Sciences Company, Inc., for site support services and maintenance and operation services at White Sands Test Facility in Las Cruces, N.M.

The cost-plus-award fee contract provides for a five-year period of performance, including four negotiated option years, totaling \$171,660,981. The basic year award totals \$31,697,892 with options being \$33,858,425 for the second contract year option, \$34,583,639 for the third, \$35,381,116 for the fourth, and \$36,139,909 for the fifth.

The performance period extends from Feb. 1, 1989 to Jan. 31, 1994.

EC III of Albuquerque, N.M., also bid for the contract.

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National Aeronautics and
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Lyndon B. Johnson Space Center
Houston Texas 77058
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For Release

RELEASE No. 89-003

Kari Fluegel
Johnson Space Center
(713) 483-5111

Feb. 6, 1989
Immediate

MITRE CORP. WINS INFORMATION SYSTEMS ACQUISITION SUPPORT CONTRACT

NASA's Lyndon B. Johnson Space Center in Houston and MITRE Corp. of McClean, Va., are definitizing a cost-plus-fixed fee contract for Information Systems Acquisition Support.

The basic award of \$10,089,600 carries with it four one-year options that, if exercised, will bring the total award to \$55,794,400. The contract also has flexible options that allow for an increase of up to 39,793 hours each year.

The work will be performed in Houston.

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National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
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For Release

Brian D. Welch
RELEASE NO: 89-004

February 7, 1989

NOTE TO EDITORS: GRAND OPENING, CENTRAL COMPUTING FACILITY

A display of the latest in computer hardware and software will mark the grand opening of the Johnson Space Center's new Central Computing Facility, Feb. 9.

A ribbon-cutting ceremony at 9 a.m., marking the opening of the first completely new major facility to be built at the center in more than 18 years, will be followed by an open house and computer exposition.

Some 75 computer technology vendors from all over the United States will show the latest hardware and software in the field. All interested media are invited to attend.

Refreshments will be available on the first floor of the three-story, 66,500 square-foot facility, to be designated Bldg. 46, and booths will fill the top two floors. Hardware manufacturers represented at the event will include Apple, IBM, GRiD and Cray. Software displays will include Micrografx, Persoft, Software Publishing and Lotus Development.

Guided tours of the building will be given at the opening. The Central Computing Facility will house data processing equipment and its support systems plus offices for operations personnel. The building also provides the space for computer equipment that is needed as JSC prepares for operations with Space Station Freedom.

Brochures describing the building and its use will be available at the opening. Along with computer manufacturers, many areas of JSC will have displays at the event, including space and life sciences, engineering, the photography lab and the printing office.

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National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
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For Release

Jeffrey E. Carr
RELEASE: 89-005

February 24, 1989

SPACE SHUTTLE CREW MEMBERS NAMED TO DOD, LIFE SCIENCES MISSIONS

NASA has named flight crew members to two Space Shuttle missions scheduled to fly in 1990.

USN Capt. John O. Creighton has been named to command shuttle mission STS-36, a Department of Defense-dedicated flight aboard Atlantis set for February 1990. USAF Col. John H. Casper will serve as pilot. Mission specialists are USMC Lt. Col. David C. Hilmers, USAF Col. Richard M. Mullane and USN Lt. Cmdr. Pierre J. Thuot.

Creighton has flown as pilot on mission STS-51G. He was born April 28, 1943, in Orange, Texas, but considers Seattle, Wash., to be his hometown.

Casper will be making his first space flight. He was born July 9, 1943, in Greenville, S.C.

Hilmers has flown as a mission specialist on STS-51J and STS-26. He was born Jan. 28, 1950, in Clinton, Iowa, but considers DeWitt, Iowa, to be his hometown.

Mullane has flown as a mission specialist on two flights, STS-41D and STS-27. Mullane was born Sept. 10, 1945, in Wichita Falls, Texas, but considers Albuquerque, N.M., to be his hometown.

Thuot, making his first flight in space, was born May 19, 1955, in Groton, Conn., but considers Fairfax, Va., to be his hometown.

Two NASA astronauts also have been named as mission specialists aboard the Space Shuttle Columbia on mission STS-40. M. Rhea Seddon, M.D., and James P. Bagian, M.D., have been assigned to the space life sciences-dedicated mission, SLS-1, scheduled for launch in June 1990.

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Seddon has flown on mission STS-51D as a mission specialist. She was born Nov. 8, 1947, in Murfreesboro, Tenn. Bagian currently is preparing for his first space flight aboard Discovery on mission STS-29 as a mission specialist. Bagian was born Feb. 22, 1952, in Philadelphia, Penn.

SLS-1 payload specialists F. Drew Gaffney, M.D., University of Texas Health Science Center, Dallas, and Robert W. Phillips, M.D., Colorado State University, Fort Collins, were named in April 1985.

The SLS-1 partial crew assignment will provide for long-range crew participation in payload training and integration. The remainder of the flight crew will be assigned later.

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NASA NEWS

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
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For Release

March 7, 1989

Pam Alloway
RELEASE NO.: 89-006

NOTE TO SCIENCE EDITORS: NASA JOHNSON SPACE CENTER HOSTS 20TH
LUNAR & PLANETARY SCIENCE CONFERENCE

More than 700 scientists from throughout the world will attend the 20th Lunar and Planetary Science Conference March 13-17, 1989 at the NASA Johnson Space Center in Houston.

Concurrent sessions will begin each day at 8:30 a.m. in the JSC Gilruth Recreation Center. The conference will feature 28 technical sessions and one special session in addition to a March 15 reunion banquet for the scientists, engineers, astronauts and managers who participated in the Apollo science programs.

The reunion banquet will be at the South Shore Harbor Hotel. Dr. George E. Mueller, who was Associate Administrator for Space Flight through the Apollo 11 mission, will speak at the banquet. Tickets are \$25 per person and are available from Pam Jones at the Lunar and Planetary Institute (713-486-2150).

Scientists and scholars will present more than 350 papers during the conference. A special session from 8-10 p.m. March 14 is titled "Opportunities in Solar System Exploration" and will involve both U.S. and U.S.S.R. conference participants. A special review session is scheduled from 1:30-5 p.m. March 15 that will recapitulate the past 20 years of lunar science. The session will feature five scientists who will compare the understanding of the Moon as it was in 1969 and what it is today. They also will discuss remaining questions concerning lunar science. Both of these sessions will be held in JSC's Teague Auditorium in building 2.

Technical session topics will cover such subjects as cosmic dust, Mars geology, Venus geophysics and geology, the nature and effects of impact cratering, cosmic rays, planetary physics and the outer solar system.

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Media interested in covering the conference should register in Gilruth Center Room 201 from 8 a.m. to 5 p.m. March 13-16. Conference abstract volumes will be available at the Gilruth Center or on request from JSC's newsroom.

A separate conference on related topics also will be held at 8 p.m. March 13 in JSC's Teague Auditorium. Dr. Michael Duke, chief of JSC's Solar System Exploration Division, and other scientists will give presentations related to this separate conference titled "Science and Applications Topics in Lunar Base Planning." The public is invited.

NASA NEWS

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston Texas 77058
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For Release

March 7, 1989

Brian Welch
Release No. 89-007

FLIGHT CONTROL OF STS-29

Flight control for STS-29, the twenty-eighth voyage of the Space Shuttle, will follow the same procedures and traditions common to all U.S. manned space flights since the Mission Control Center was first used for Gemini IV in 1964.

As on past flights, responsibility for conduct of the mission will revert to the Mission Control Center (MCC) in Houston once Discovery clears the tower of Launch Pad 39-B at the Kennedy Space Center. Mission support will begin in the MCC at 2:30 a.m. CDT on the morning of launch and will continue around the clock through the landing and post-landing activities.

The mission will be conducted from Flight Control Room One (FCR-1) on the second floor of the MCC, which is located in Bldg. 30 at Johnson Space Center.

All of the traditional hallmarks of Shuttle missions will be available to news media covering the flight. Throughout the mission, NASA will continue its practice of providing around-the-clock, live release of air-to-ground transmissions between the spacecraft and the MCC. Live views of the activities within FCR-1, alternating with views of the large situation map in Mission Control, will be fed continuously on NASA Select television.

NASA also will hold change-of-shift press conferences with offgoing flight directors, approximately every eight hours, as warranted by mission events and media interest. The press conferences will originate from JSC's News Center in Bldg. 2, Room 135, and will be carried live on NASA Select, with two-way question and answer capability available at Kennedy, the Marshall Space Flight Center and the Dryden Flight Research Facility.

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As in the past, four teams of flight controllers will alternate shifts in the control center and in nearby analysis and support facilities at JSC. The handover between each team takes about an hour and allows each flight controller to brief his or her oncoming colleague on the course of events over the previous two shifts. Change-of-shift press conferences generally take place 30 minutes to an hour after the shift handovers have been completed.

The four flight control teams are referred to as the Ascent/Entry team and the Orbit 1, Orbit 2 and Planning teams. Generally, the STS-29 crew's working day is split between the Orbit 1 and Orbit 2 shifts.

The Ascent/Entry team, led by Flight Director Alan L. (Lee) Briscoe, will conduct the launch and landing phases of the flight. While Discovery is in orbit, this same shift, operating from about midnight to 9 a.m. CST each day, is known as the Orbit 1 team and will be led by Flight Director Granvil A. (Al) Pennington. Because the shifts overlap in this manner, some of the flight control positions will be staffed by the same personnel for both Ascent/Entry and Orbit 1 operations. Other positions will alternate between specialists in launch/landing activities and orbital operations.

The Orbit 2 team, led by Flight Director Charles W. (Chuck) Shaw, will be on-console each day from around 8 a.m. to 5 p.m. The Orbit 2 team has primary responsibility for the deploy of TDRS-D on Flight Day One at approximately 6 hours into the mission. Two additional deploy opportunities, at approximately 7 hours, 45 minutes elapsed time and again at around 10 hours elapsed time, will be available on Flight Day One. Although the Orbit 2 team specializes in TDRS deploy activities, the Orbit 1 team also has been extensively trained for this phase of the mission. That additional expertise would come into play only if a Flight Day Two backup deploy opportunity for TDRS-B were to become necessary. This final deploy window will occur during the Orbit 1 shift on Flight Day Two, at approximately 21 hours, 15 minutes into the flight.

The Planning Team, led by Flight Director Ron Dittmore, will be on-console from about 4 p.m. to 1 a.m. CST each day. The Planning shift, which for the most part operates during the crew's sleep period, has the dual responsibility for monitoring the systems aboard Discovery and updating schedules or coordinating any changes in the flight plan as may be dictated by real-time mission events.

MCC POSITIONS AND CALL SIGNS FOR STS-29

The flight control positions in the Mission Control Center, their call signs and their functions are:

Flight Director (FLIGHT)

Has overall responsibility for the conduct of the mission.

Spacecraft Communicator (CAPCOM)

By tradition an astronaut; responsible for all voice contact with the flight crew.

Flight Activities Officer (FAO)

Responsible for procedures and crew timelines; provides expertise on flight documentation and checklists; prepares messages and maintains all teleprinter traffic to vehicle.

Integrated Communications Officer (INCO)

Responsible for all Orbiter data, voice and video communications systems; monitors the telemetry link between the vehicle and the ground; oversees the uplink command and control processes.

Flight Dynamics Officer (FDO)

Responsible for monitoring vehicle performance during the powered flight phase and assessing abort modes; calculating orbital maneuvers and resulting trajectories; and monitoring vehicle flight profile and energy levels during reentry.

Electrical, Environmental & Consumables Manager (EECOM)

Responsible for all life support systems, power management, heating and cooling systems, transducers and vehicle lighting; monitors fuel cells; manages consumables.

Payloads Officer (PAYLOADS)

Coordinates all payload activities; serves as principal interface with remote payload operations facilities.

Data Processing Systems Engineer (DPS)

Responsible for all onboard mass memory and data processing hardware; monitors primary and backup flight software systems; manages operating routines and multi-computer configurations.

Propulsion Engineer (PROP)

Manages the reaction control and orbital maneuvering thrusters during all phases of flight; monitors fuel usage and storage tank status; calculates optimal sequences for thruster firings.

Booster Systems Engineer (BOOSTER)

Monitors main engine and solid rocket booster performance during ascent phase.

Guidance, Navigation & Control Systems Engineer (GNC)

Responsible for all inertial navigational systems hardware; monitors radio navigation and digital autopilot hardware systems.

Ground Controller (GC)

Coordinates operation of ground stations and other elements of worldwide space tracking and data network; responsible for MCC computer support and displays.

Maintenance, Mechanical, Arm & Crew Systems (MMACS)

Formerly known as RMU; responsible for remote manipulator system; monitors auxilliary power units and hydraulic systems; manages payload bay and vent door operations.

EVA Specialist (EVA)

Another specialty position, activated for planned or contingency extra-vehicular activity; operates from the MMACS console; monitors timeline and all preparations leading up to an EVA; monitors spacesuit parameters and provides ready reference on procedures during an EVA.

Flight Surgeon (SURGEON)

Monitors health of flight crew; provides procedures and guidance on all health-related matters.

Public Affairs Officer (PAO)

Provides real-time explanation of mission events during all phases of flight.

STS-29 FLIGHT CONTROL TEAM STAFFING

| Position | Ascent/Entry | Orbit 1 | Orbit 2 | Planning |
|----------|---|------------------------------|-------------------------------------|--------------------------|
| FLIGHT | Alan L. Briscoe (A) Ron Dittmore (E) | Al Pennington | Charles W. Shaw | Ron Dittmore |
| CAPCOM | John. O. Creighton Frank Culbertson | Pierre Thuot Marsha Ivins | Katherine Sullivan Mike Baker | David Low Ken Cameron |
| FAO | Gail A. Schneider | Gail A. Schneider | Robert L. Schaf | Stephen S. Gibson |
| INCO | Jay. E. Conner | Jay. E. Conner | Harry Black | Roberto Moolchan |
| FDO | Edward Gonzalez (A) Bruce Hilty (E) | John D. Rask | Kerry M. Soileau | Matthew R. Abbott |
| EECOM | Charles W. Dingell | Charles W. Dingell | Leonard J. Riche | Ray O. Miessler |
| PAYLOADS | Neilan E. Cook | Neilan E. Cook | Ben L. Sellari | Nellie N. Carr |
| DPS | Roberto S. Galvez | Roberto S. Galvez | Terry W. Keeler | David D. Tee |
| PROP | Richard D. Jackson | Richard D. Jackson | Keith A. Chappell | Sarah A.V. Kirby |
| BOOSTER | Thomas Kwiatkowski | ////// | ////// | ////// |
| GNC | Jeffrey W. Bantle | Jeffrey W. Bantle | Charles K. Alford | Stephen J. Elsner |
| GC | Norman Talbott John Snyder | Chuck Capps Al Davis | Julius Conditt Robert Culbertson | John Wells V. Lucas |

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STS-26 FLIGHT CONTROL TEAM STAFFING
(Continued)

| Position | Ascent/Entry | Orbit 1 | Orbit 2 | Planning |
|----------|-------------------|-------------------|-------------------|-----------------|
| MMACS | R. Kevin McCluney | R. Kevin McCluney | Robert C. Doremus | Paul F. Dye |
| SURGEON | Richard Jennings | John Schulz | ////// | ////// |
| PAO | Brian Welch (A/E) | Brian Welch | Billie A. Deason | Jeffrey E. Carr |

(A) = Ascent; (E) = Entry

STS-26 FLIGHT CONTROL TEAM STAFFING
(Continued)

| Position | Ascent/Entry | Orbit 1 | Orbit 2 | Planning |
|----------|---------------------|-------------------|-------------|-------------------|
| MMACS | R. Kevin McCluney | R. Kevin McCluney | Paul F. Dye | Robert C. Doremus |
| SURGEON | John Schulz | Richard Jennings | ////// | ////// |
| PAO | Billie Deason (A/E) | Billie Deason | Brian Welch | Jeffrey E. Carr |

(A) = Ascent; (E) = Entry

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
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For Release

Linda Copley
RELEASE No. 89-008

March 7, 1989
3 p.m. CST

NORTHROP WORLDWIDE AIRCRAFT SERVICES WINS JSC CONTRACT

NASA's Lyndon B. Johnson Space Center (JSC), Houston, has awarded a contract to Northrop Worldwide Aircraft Services, Inc., Lawton, Okla., for maintenance and modification of JSC-assigned aircraft.

The work will be performed at the JSC facility at Ellington Field, Houston, and in El Paso, Texas, and Edwards Air Force Base, Calif.

The cost-plus-award-fee contract provides for a 5-year period of performance, including four optional years, totaling \$77,950,743. The basic year award totals \$15,322,863. The contract also has flexible options which allows for an increase in hours of up to 95,542 hours each year.

- end -

NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

For Release

Linda Copley
RELEASE NO.: 89-009

March 7, 1989
3 p.m. CST

PIIONEER CONTRACT SERVICES AWARDED JSC CONTRACT

NASA's Lyndon B. Johnson Space Center, Houston, has awarded a contract to Pioneer Contract Services, Inc., Houston, for logistics support services carried out at the center.

The cost-plus-fixed-fee contract provides for a basic year effort, plus four 1-year options, totaling \$61.5 million. The basic year award is \$11.4 million, with the basic performance period extending from March 1, 1989, through Feb. 28, 1990.

- end -

NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

For Release

James Hartsfield
RELEASE NO: 89-010

March 9, 1989

NOTE TO EDITORS: STS-29 EARTH OBSERVATIONS BRIEFING SCHEDULED

A press briefing on astronaut Earth observations photography to be taken during Space Shuttle mission STS-29 has been planned for 2 p.m. on Flight Day 3 of the mission. The briefing will be held in addition to other regularly scheduled mission briefings which originate from the Johnson Space Center, Houston, TX. The briefing will be presented by Dr. Charles A. Wood, Manager of the Space Shuttle Earth Observations Office at JSC, and Kamlesh P. Lulla, lead Earth observations scientist for STS-29.

The briefing is planned to be carried live on NASA Select Television. Newsrooms at NASA centers and at NASA Headquarters in Washington, D.C., will be able to participate in a question and answer session.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
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For Release

James Hartsfield
RELEASE NO: 89-011

March 14, 1989

DISCOVERY'S RETURN-TO-FLIGHT PHOTOGRAPHS RECORD MANY FIRSTS

Earth observations photographs taken by Discovery's crew during America's return to manned space flight in 1988 were among the clearest in more than 20 years, and they captured a variety of environmental conditions.

Included in the astronauts' photography from September 1988 is an at least 1.044 million square-mile smoke cloud over South America's Amazon River basin and, in Africa, evidence of flooding in areas that have experienced a lengthy drought.

Due to an unexpected improvement in atmospheric clarity over the Northern Hemisphere, the Discovery crew could distinguish ground details about 700 miles away from their spacecraft, much farther than has been usual for Space Shuttle flights. Visibility over the Northern Hemisphere during STS-26 was the best since the flights of the Gemini Program in the 1960s.

In total, the crew took 1,505 photographs of Earth during the four-day mission. Discovery was launched into an orbit that kept it above only the tropical and subtropical regions of Earth. That orbit took the spacecraft over about half of Earth's surface, covering parts of 122 nations and regions that hold about 75 percent of the world's population.

Photographs show a dense, white smoke cloud, the result of tropical forest, pasture and croplands being cleared and burned, completely obscuring the ground over much of South America's Amazon River basin. If placed over the United States, the same cloud would cover an area of the country more than three times the size of Texas. It is the largest and thickest accumulation of smoke ever photographed by astronauts, much larger than the previous largest smoke cloud photographed by astronauts over the same region in 1984.

STS-26 also photographed smoke clouds over Sumatra and Borneo, Indonesia, Madagascar, eastern Africa, northern Australia and Bolivia. Some photographs show apparent irrigation features in the tropics -- in areas that normally receive 100 inches of annual rainfall.

In Africa, the "green line" of vegetation that generally marks the southern boundary of the Sahara Desert had moved the farthest north it has been in astronaut photography since 1965. Also, standing water was photographed in the Sahara.

For the first time in Shuttle history, Africa's Niger river was photographed in full flood and out of its banks. Photographs of the Blue and White Nile rivers also showed evidence of recent flooding.

Throughout eastern Africa, the landscape was tinted with green, a condition never before seen in this region during the Shuttle program. Still, Africa's Lake Chad and Lake Nasser, two lakes that have long been studied by space photography, were at the lowest levels ever photographed by astronauts. Since 1960, Lake Chad's surface area is estimated to have declined by more than 90 percent.

The extreme atmospheric clarity over the Northern Hemisphere during the mission was due, at least in part, to the absence of major global duststorms. Duststorms of million-square mile dimensions over northern Africa, even extending halfway across the Atlantic Ocean, were photographed during 1984 and 1985 Shuttle flights. But no such African duststorms were seen during STS-26, nor were major duststorms observed elsewhere.

A lack of recent major volcanic eruptions, which cause dust in the upper atmosphere, also may have contributed to the extreme clarity.

As a result, the STS-26 photographs captured details not usually seen in Shuttle photography: for the first time, an aircraft was photographed generating a contrail; individual buildings could be seen in the Canary Islands; a line of electrical transmission pylons was seen in southern Sudan; and oil platform flares were seen in the Gulf of Campeche.

STS-26 also photographed the effects of Hurricane Gilbert on the Mexican Gulf Coast and five volcanoes with signs of eruptive activity.

Earth photography from the Space Shuttle is handled by the Space Shuttle Earth Observations Office at the Johnson Space Center. The office trains Shuttle crews in Earth photography, selects targets for photography for each mission and analyzes the resulting photographs. In addition, research is conducted by specialists in environmental sciences, biology, climatology, geology and other fields using data obtained with Shuttle photography.

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NASA photos to illustrate this release can be obtained through the JSC Still Photography Library at (713) 483-8602. Photograph numbers include: SL-2-5-325; S26-38-014T; S26-43-80; S26-40-66; S26-33-061; S26-46-052; S26-38-014U; S26-35-087; S26-35-091; S26-40-047; S26-39-068; S26-35-048; S26-44-049.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

For Release

Steve Nesbitt
RELEASE NO. 89-012

IMMEDIATE
March 17, 1989

NOTE TO EDITORS: CREW CONFERENCES, STS-30 BRIEFINGS SET

The astronaut crew press conference and background briefings for the STS-30 Space Shuttle mission will be held March 27, 1989, at the NASA Johnson Space Center in Houston.

Briefings are scheduled to begin at noon CST with a mission overview followed by sessions on the Magellan spacecraft and other experiments.

The STS-29 crew post-flight press conference will be at 2 p.m. CST Tuesday, March 28.

All briefings will be held in Room 135, Bldg. 2 at JSC. They will be carried on NASA Select Television which is accessible on RCA Satcom F2R, transponder 13. The frequency is 3960 MHz with a look angle of 72 degrees west longitude.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

For Release

Kari Fluegel
Release No. 89-013

March 21, 1989
Immediate

JSC TO HOST SATELLITE SERVICING CONFERENCE

NASA's Johnson Space Center will host a three-day workshop to exchange information and discuss key issues regarding the on-orbit servicing of satellites June 21-23.

The Satellite Services System workshop, supported by the Advanced Program Development Division of the National Aeronautics and Space Administration's Office of Space Flight, will be a joint effort by government and industrial entities to discuss satellite design, servicing operations, tools and equipment, and future opportunities.

The biennial workshop is unclassified and open to the public. All sessions will be in JSC's Teague Auditorium in the Visitors Center. Preregistration is not required, but to assist in prebadging and the arranging of tours contact Lana Arnold, Lockheed Engineering and Sciences Co., (713) 333-7112.

For more information about the workshop, contact Charles T. Woolley; NASA, Johnson Space Center; Attention: IB; Houston, Texas 77058.

NASA News

National Aeronautics and
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For Release

Kari Fluegel
Release No. 89-014

March 21, 1989
Immediate

NASA AWARDS MARS ROVER SAMPLE RETURN RESEARCH CONTRACTS

NASA's Johnson Space Center has selected Martin Marietta Astronautics Group, Space Systems, of Denver, Colo. and TRW, Space and Technology Group of Redondo Beach, Calif., to proceed with research studies for a robotic mission exploring the planet Mars.

Martin Marietta and TRW will conduct parallel 13-month Phase A studies valued at \$975,000 each. The contracts are fixed-priced study agreements.

The Mars Rover Sample Return (MRSR) Program is managed by the Solar System Exploration Division of the Office of Space Science and Applications at NASA Headquarters in cooperation with the Office of Exploration. The MRSR Project is a joint undertaking involving JSC and NASA's Jet Propulsion Laboratory (JPL) in Pasadena, Calif. JPL has project management responsibilities, while JSC provides management and technical support.

The MRSR mission, a candidate mission for launch in the late-1990s, will incorporate a robotic rover traversing the red planet's rocky terrain and a return vehicle to bring surface, subsurface and atmospheric samples back to Earth. The mission could serve as a precursor step toward an eventual human mission to Mars in the next century.

Such a robotic mission has been recommended by the Solar System Exploration Committee of the NASA Advisory Council and has been studied in-house by NASA since 1980.

The one mission concept proposes the delivery of MRSR system elements during the 1996 and 1998 launch opportunities when the Earth and Mars are best aligned for minimum propulsive energy

-more-

transfer. The 1996 opportunity would see an Imaging Orbiter sent to Mars to develop high-resolution topographic maps of several candidate landing sites and to certify suitable sites for subsequent landings on Mars. The Imaging Orbiter also would aid planning for the Rover's traverse of the planet.

During the 1998 opportunity, three separate vehicles could be delivered to Mars orbit: a Communications Orbiter to serve as the primary telecommunications link between Mars and Earth; another vehicle containing a lander with its Rover payload; and a third vehicle containing a Sample Return Orbiter and a lander with its Ascent Vehicle payload.

At Mars, while the Communications Orbiter circles the planet, the vehicle containing the Lander and the Rover would descend through the atmosphere to the surface. The Rover then would be deployed and begin its journey across the Martian landscape, selecting scientifically significant rock and soil samples. The Rover, aided by the information from the Imaging Orbiter, also would locate a suitable site for the second lander. Once that site is located, the vehicle containing the second lander and the Ascent Vehicle would separate from the Sample Return Orbiter and descend to the surface.

Over the period of about a year, the Rover periodically would return to the Ascent Vehicle and transfer the collected samples. Once sufficient samples are collected, the Ascent Vehicle would lift the collected samples into Mars orbit where it would rendezvous with the Sample Return Orbiter for the subsequent journey home.

The Martin Marietta and TRW studies will look at the spacecraft for delivery to Mars orbit, landing on the surface and return of the samples to Earth. Most of the MRSR work will be performed by Martin-Marietta's and TRW's plants in Denver and Redondo Beach, respectively.

Other companies bidding on the MRSR contracts were General Electric and Lockheed Corp.

NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
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For Release

Jeffrey E. Carr
RELEASE NO. 89-015

March 22, 1989

NOTE TO EDITORS: STS-30 Briefings Schedule

The following series of press briefings for mission STS-30 will be conducted at the Johnson Space Center on Monday, March 27th beginning at noon CST.

| | |
|------|--|
| NOON | Mission Overview (Lead flight director Milt Heflin; John Gerpheide of JPL) |
| 1300 | STS-30 Crew Press Conference |
| 1400 | Magellan Science Briefing (Steve Saunders of JPL) |
| 1530 | Secondary Payloads: Fluids Experiments Apparatus Mesoscale Lightning Experiment |

NOTE (STS-29 POST FLIGHT CREW PRESS CONFERENCE): On Tuesday, March 28th, the STS-29 astronauts will give a post-flight press conference at JSC beginning at 2:00 p.m. CST.

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All briefings will be carried live on NASA Select television via Satcom F2R (transponder 13). Two-way Q&A will be provided at NASA Headquarters in Washington, D.C., the Jet Propulsion Laboratory in Pasadena, CA, the Kennedy Space Center in Florida, and the Marshall Space Flight Center in Huntsville, AL.

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For Release

Jeffrey E. Carr
RELEASE NO. 89-016

3/24/89

HAUCK TO ASSUME NAVY POST AT PENTAGON

Three-time space flight veteran Capt. Frederick Hauck (USN), crew commander of the first post-Challenger Shuttle mission, has announced that he will leave NASA on April 3 to assume a position on the staff of the Chief of Naval Operations at the Pentagon. Hauck will serve as Director of Navy Space Systems Division (OP-943), reporting to that post in late May.

"My eleven years with NASA have been extremely rewarding. I'll miss the challenging environment and the people. I am looking forward to continuing my career in the Navy and to the new challenges it provides", said Hauck.

Hauck was selected as an astronaut in January 1978. He made his first Shuttle flight as pilot on mission STS-7 in June of 1983. That mission featured the deployment of two communications satellites, the first deployment and retrieval demonstration of the STS, and the first formation flying of the Orbiter with a free-flying satellite (SPAS-01).

In November 1984, Hauck served as commander of mission STS-51A, the first space salvage mission in history. Hauck and crew retrieved and returned to Earth the Palapa B-2 and Westar VI communications satellites after deploying two others (Anik D-2, LEASAT-1).

Following the Challenger accident, in August 1986, he was appointed Associate Administrator for External Relations at NASA Headquarters in Washington, D.C.

Hauck returned to the astronaut office in February 1987 when he was named to command the first post-Challenger mission, STS-26. In late September 1989, the "return to flight" mission featured the deployment of the Tracking and Data Relay Satellite (TDRS-C) and operation of eleven mid-deck experiments.

With the completion of his third space mission, Hauck has logged a total of over 436 hours in space.

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For Release

Billie Deason
RELEASE NO. 89-017

March 27, 1989

JSC ANNOUNCES KEY EXECUTIVE REASSIGNMENTS

John Aaron has been appointed Manager of the Space Station Projects Office at the Johnson Space Center, Director Aaron Cohen announced today. He succeeds Clarke Covington who becomes Special Assistant to the Director.

Aaron joined JSC in 1964 and has held key positions in mission support. He served as manager of the level B space station activity at JSC, and recently was Manager of the Lunar and Mars Exploration activity at NASA Headquarters.

Covington joined JSC in 1962 and has held key positions in engineering and space station activities. In his new assignment, he will provide Cohen with added capability to conduct technical and management reviews of the center's programs and organizations. He will help shape the JSC organization as the center enters a new phase of space station and as new programs develop.

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For Release

Jeffrey Carr
RELEASE NO. 89-018

4/05/89
1:30 p.m. CDT

ASTRONAUTS NAMED TO SPACE SCIENCE MISSIONS (STS-37, STS-40)

Astronaut crew members have been named for two scientific Space Shuttle missions scheduled in 1990.

Commanding the Space Shuttle Discovery on mission STS-37 will be USAF Col. Steven R. Nagel. USMC Lt. Col. Kenneth D. Cameron will serve as the pilot. Mission specialists are USAF Lt. Col. Jerry L. Ross, Jay Apt, Ph.D., and Linda M. Godwin, Ph.D.

Following their launch in April of next year, the crew will deploy the Gamma Ray Observatory (GRO) from the payload bay of Discovery using the Shuttle's robot arm. The GRO will explore gamma ray sources throughout the universe, studying the origin of our own galaxy and others, examining quasars, pulsars, and supernova remnants from an altitude of 243 miles above the Earth.

USMC Col. Bryan D. O'Connor has been named to command STS-40, the space and life sciences-dedicated mission, SLS-1. Serving as pilot aboard the Space Shuttle Columbia will be USAF Col. John E. Blaha. Also named as a mission specialist is Tamara E. Jernigan.

SLS-1 mission specialists M. Rhea Seddon, M.D., and James P. Bagian, M.D., and payload specialists F. Drew Gaffney, Ph.D., and Robert W. Phillips, Ph.D., were named previously.

Inside a pressurized laboratory fixed in Columbia's payload bay, the SLS-1 crew will conduct more than two dozen life sciences investigations in the microgravity environment. Launch is currently set for June 1990.

Nagel has flown twice in space as a mission specialist on Shuttle mission STS 51-G in June 1985 and as pilot on STS 61-A in October 1985. He was born October 27, 1946, in Canton, IL.

Cameron will make his first space flight. He was born November 29, 1949, in Cleveland, OH.

Ross has previously flown on two Shuttle missions, STS 61-B in November 1985 and STS-27 in December of last year. Ross was born January 20, 1948, in Crown Point, IN.

Apt will make his first space flight. He was born April 28, 1949, in Springfield, MA but considers Pittsburgh, PA to be his hometown.

Godwin will make her first flight in space, also. She was born July 2, 1952, in Cape Girardeau, MO.

O'Connor has flown previously as pilot on STS 61-B in November 1985. After the Challenger accident, he was named Chairman of NASA's Space Flight Safety Panel. O'Connor was born September 6, 1946, in Orange, CA but considers Twentynine Palms, CA to be his hometown.

Blaha made his first space flight last month as pilot of STS-29. He was born August 26, 1942, in San Antonio, TX.

Jernigan will make her first flight in space. She was born May 7, 1959, in Chattanooga, TN but considers Santa Fe Springs, CA to be her hometown.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
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For Release

Kari Fluegel
Release No. 89-019

April 6, 1989
Immediate

JSC DEVELOPMENT RECOGNIZED BY SPINOFF HALL OF FAME

Space technology covering the Detroit Lion's Silverdome and a Saudia Arabian airport has made its way to the Cooperstown of space spinoffs.

A fabric developed by the National Aeronautics and Space Administration at the Johnson Space Center for use as Apollo astronauts' space suits and later transferred to the private sector as a lightweight roofing material has been placed into the Space Technology Hall of Fame in the U.S. Space Foundation Building in Colorado Springs.

"Our nation's investment in space is continually paying benefits to all of us," said Dean Glenn, technology utilization officer at JSC. "Not only do space program spinoffs make our lives easier and more useful, but our whole economy benefits as new products, new businesses and new jobs are constantly being derived."

Recognition of the fabric, developed by Dr. Frederic Dawn, special assistant in JSC's Crew and Thermal Systems Division, is the second JSC spinoff placed in the Hall of Fame in its first two years of existence. In 1988, the Firefighters' Breathing Apparatus, a system developed from astronaut breathing equipment advances, was inducted. Award recipients are selected by a committee of leaders in Congress and pioneers in the commercialization of space.

"Recognition of JSC personnel by these groups and individuals is high praise, indeed," Glenn said.

During the Apollo era, NASA needed a fabric that was durable, yet thin, light and flexible for astronauts' space suits. Most importantly the fiber had to be non-flammable in an oxygen-rich environment. Dawn, who had been developing such a fiber since before he joined NASA in 1962, met the need. Under NASA contract, Owens-Corning Fiberglas Corporation in Toledo, Ohio, wove the ultrafine glass fiber called Beta yarn into a

-more-

fabric and coated it with Teflon TFE manufactured by the Du Pont Company in Wilmington, Delaware, tailoring it for astronaut use. Beta yarn now is used extensively in the shuttle and on many satellites, Dawn said.

"I felt a spinoff would have tremendous benefits for commercial applications," he said. "I think the Technology Utilization Office did a very good job on this."

To adapt the fabric for construction, Owens-Corning thickened the yarn, Chemical Fabrics Inc. of Bennington, Vermont, wove it into stronger and more porous fabric and applied a heavier coating of Teflon TFE.

"NASA has done an outstanding job in space," Dawn said. "I think now we are getting the advantages of the space program."

The fabric roof of Pontiac Stadium, the first structure to use the material, emits light while protecting the playing field and 80,000 fans from the weather. The Teflon TFE-coated Beta Fiberglas material is virtually impervious to weather and sunlight. It will not stretch, shrink, mildew or rot; is strong, lightweight and flame-resistant; and does not require periodic cleaning because dirt does not stick to the surface of the Teflon TFE. The cost was about only 30-40 percent as much as conventional roofing.

The King Abdulaziz International Airport in Jeddah, Saudia Arabia, used the fabric on a colossal facility built to ease entry formalities for the massive influx of Moslems making pilgrimages to the holy city of Mecca. Each structure at the terminal has a multi-tented fabric roof spanning more than 50 acres. Together, the structures contain 210 individual tent units and cover an area roughly equivalent to 80 football fields.

"The fabric domes were nominated for the first Hall of Fame award in 1988," Glenn said. "They are an outstanding example of how United States space technology can benefit mankind around the world and change the very shape and texture of our lives."

The Space Technolgy Hall of Fame was initiated in 1988 at the Fourth National Space Symposium as part of the U.S. Space Foundation's commitment to increase public support for the nation's space effort and to motivate and educate the country's youth about the opportunities and challenges of space, Glenn said.

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For Release

Kyle Herring ²⁰
RELEASE NO. 89-019

4/10/89
Immediate

EXECUTIVE ASSIGNMENTS IN NSTS, INTEGRATION AND OPERATIONS OFFICES

Leonard S. Nicholson has been named deputy manager of the National Space Transportation System Program at the Johnson Space Center. He was formerly manager of the NSTS Integration and Operations Office. Lawrence G. Williams will serve as acting manager of that office.

Nicholson succeeds Jay F. Honeycutt, who moved to the Kennedy Space Center, FL, last month to direct the processing of NASA's Space Shuttle Orbiters as director of STS Management and Operations.

Nicholson joined NASA in 1963 in the Engineering and Development Directorate at JSC and held several engineering positions in the Advanced Missions Program Office, the Apollo Spacecraft Program Office and the STS Operations Office.

He then served as technical assistant to the center director until becoming manager of the NSTS Mission Integration Office in April 1982. In this capacity, Nicholson was responsible for the overall management of the flight manifest and requirements, and integration and payload integration. In 1985 he became manager of the Integration and Operations Office, continuing his responsibilities for directing the operations and payload integration activities of the NSTS Program Office.

Williams began his career at the Johnson Space Center in 1962 working on the Apollo and Skylab programs, and the Apollo-Soyuz Test Project. He served as the deputy manager of the NSTS Engineering Integration Office during the Shuttle recovery activity and most recently served as deputy manager of the NSTS Integration and Operations Office.

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For Release

April 17, 1989

Jeffrey Carr
RELEASE NO. 89-021

DEADLINE SET FOR NEXT ASTRONAUT SELECTION

Applications received by NASA on or before June 30, 1989 will be considered in the next astronaut candidate selection, now planned for early 1990. The selection will be the first in a regular two-year selection cycle which was announced last year.

After six months of screening, medical evaluations, and interviews, the astronaut candidate class of 1990 will be announced in January, and candidates will report to the Johnson Space Center in July of next year.

NASA will continue to accept and review applications from the general public on an ongoing basis. Those received after June 30 will be eligible for consideration in the 1992 selection. The number of selections made every two years will be based on projected requirements.

Applications can be obtained by writing to the following address:

NASA, Lyndon B. Johnson Space Center
Astronaut Selection Office
ATTN: AHX
Houston, Texas 77058

Applicants must be citizens of the United States.

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Johnstown Tribune-Democrat
Somerset Daily American
University of Pittsburgh Pitt News
Univ. of Pittsburgh Pitt Magazine

For Release

James Hartsfield
RELEASE NO. 89-022

4/19/89

AREA NATIVE HONORED FOR ENHANCING SPACE SHUTTLE'S SAFETY

Space engineer Bernard J. Rosenbaum was recently presented one of the highest honors bestowed in his field, the 1989 Eagle Manned Mission Success Award, for his work on the Space Shuttle's return to flight in September 1988.

Rosenbaum received the award, presented by the National Space Club in a Washington D.C. ceremony March 10, for his efforts in redesigning the major connection between the Space Shuttle's main engines and the external fuel tank. Rosenbaum was the single most influential individual in redesigning a 17-inch valve on the underside of the Space Shuttle Orbiter that closes following main engine cutoff, normally about 8.5 minutes into a spaceflight, just before the large external fuel tank separates from the vehicle, Propulsion and Power Division Chief Chester Vaughn said in the award nomination.

Rosenbaum's redesign involved mechanically latching the valve in place to provide extra protection against an inadvertent closing of the valve while the main engines are running. Such an accidental closing had been a major worry during the first 25 Shuttle flights and would have cut off propellant flow to the main engines, caused feed lines to burst and resulted in an explosion and the loss of vehicle and crew. Such an accidental closing of the valve had occurred earlier in ground tests of the system.

Rosenbaum conceived the idea to latch the valve open while the engines are running, fabricated a simple working model of his design and was largely responsible for the concept's acceptance by NASA's Shuttle program, Vaughn said.

The Eagle Manned Mission Success Award is presented annually by the National Space Club to individuals or groups who have made a significant contribution to the success manned space flight during the previous year.

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Rosenbaum, 47, has been an aerospace engineer at the Lyndon B. Johnson Space Center for 25 years. He is a native of the Somerset and Johnstown, Pennsylvania, area. The son of Leo and Rita Rosenbaum of RD2, Stoystown, Rosenbaum attended high school in Kantner and Johnstown before earning a bachelor of science from the University of Pittsburgh. He and his wife, the former Patricia Ann Kohan of Johnstown, have three children, Scott, 25; Robert, 23; and Melissa, 17. The family resides in Seabrook, Texas, near the Johnson Space Center.

During his career with NASA, Rosenbaum has worked on propulsion systems for the Gemini, Apollo and Lunar Module spacecrafts. During the Apollo Program, he coordinated the engineering detective work done across the country seeking the cause of the Apollo 13 oxygen tank explosion.

Rosenbaum also was instrumental in design of the hydraulic system now used aboard the Space Shuttle. In addition, he worked as manufacturing manager for the Orbital Reservicing System, a NASA project that flew on a 1985 Shuttle flight and demonstrated the feasibility of refueling satellites with hydrazine propellant in space.

Rosenbaum's past honors include several NASA cost-reduction awards for ideas estimated to have saved more than 73 million in taxpayer's dollars. He also has received certificates of commendation, several superior achievement awards and an outstanding performance award from NASA. Rosenbaum holds two patents on devices he designed for the Space Shuttle plus other patents on devices used for measuring rocket engine flow rates.

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Steve Nesbitt
RELEASE NO. 89-023

For Release
April 19, 1989
IMMEDIATE

SPACE CAREERS SYMPOSIUM TO BE HELD AT JSC APRIL 27-28

The NASA Johnson Space Center, IBM and the Society of Hispanic Professional Engineers will sponsor a symposium April 27-28 to promote interest in science and engineering among students.

"The Challenge of Spaceflight: A Space Symposium" will be held at the Gilruth Recreation Center at JSC. NASA officials and astronauts will talk to students and other symposium attendees about career opportunities in the space program.

Astronauts Sidney Gutierrez and Franklin Chang-Diaz will address sessions of the symposium and will meet informally with students at a social gathering.

Educators and SHPE officers will discuss ways to develop interest in the science and engineering fields and concerns over ensuring an adequate supply of trained professionals to meet future space program needs.

A job fair hosted by SHPE and designed to bring together college students and practicing professionals with representatives of aerospace companies will be held April 29 at the Kings Inn near the Johnson Space Center.

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EDITORS: For additional information about the symposium or for interviews with speakers or other participants, contact Steve Nesbitt at 483-5111.

NASA NEWS

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
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For Release

Kelly Humphries
RELEASE NO: 89-024

April 24, 1989

HIGH SCHOOL SENIORS TO WATCH NASA MANAGERS IN ACTION

Managers at NASA's Johnson Space Center have volunteered to host 27 seniors and seven teachers from local high schools for a "Management Experience Day" on April 26.

The experience is designed to create an opportunity for selected students to understand the workplace; to assist them in goal setting and career selection; to provide a network for future job opportunities; to create a climate of involvement and interaction between NASA and local schools, and to strengthen and improve school programs.

Each student and teacher will be assigned to accompany a manager or supervisor through his or her activities from 1 to 4 p.m. The observers will be matched with managers working in their fields of interest, and will be authorized to be present during every business task performed.

The experience is being sponsored by the JSC Chapter of the National Management Association, following through with last year's successful pilot program. The group plans to make the day an annual event.

The students, from Clear Lake, Clear Creek, Dobie, Friendswood, Pearland and B.T. Washington High Schools, were recommended by the principals at their schools. They were chosen for their interpersonal and leadership skills and interest in learning about NASA leadership.

The experience day will begin at 8 a.m. with a welcome by Daniel Nebrig, Executive Assistant to the JSC Director, and a tour of JSC. After lunch, observers and managers will be paired from 1 to 4 p.m. Participants have been invited to the NMA dinner meeting that begins at 5 p.m. in JSC's Gilruth Recreation Center.

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NASA News

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For Release

Jeffrey Carr
RELEASE No. 89-025

April 24, 1989
12 noon CDT

MCBRIDE TO LEAVE NASA; BRAND NAMED COMMANDER OF STS-35

Astronaut Jon A. McBride (Captain, USN) has announced his intention to leave NASA effective May 12, 1989.

McBride was named last year to command the STS-35 (ASTRO-1) mission, scheduled for launch in March 1990. He will be succeeded as STS-35 commander by Vance D. Brand.

McBride was selected as an astronaut in August 1978. He was the lead T-38 chase pilot for STS-1, the maiden voyage of Columbia in April 1981, and a Capsule Communicator (CAPCOM) in the Mission Control Center for Shuttle flights STS-5, STS-6, and STS-7.

He flew in space as pilot aboard Challenger on STS 41-G in October 1984. McBride was scheduled to fly next in March 1986 as the commander of STS 61-E. The flight was one of several deferred by NASA in the wake of the Challenger accident in January 1986.

McBride recently completed an assignment at NASA Headquarters, Washington, D.C., as the Acting Assistant Administrator for Congressional Relations, a post he held since September 1987.

He has also announced his intent to retire from the Navy in the near future. McBride said, "I've spent an extremely rewarding 25 years with NASA and the Navy. This move has been a very difficult decision for me. But in the final analysis, I felt it was time to make a career change and return to West Virginia. I'll continue to follow developments in the space program with keen interest".

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Brand joined NASA as an astronaut in 1966. He flew as Apollo command module pilot on the Apollo-Soyuz Test Project mission in 1975. Brand has also flown as commander of Shuttle missions STS-5 in November 1982 and STS 41-B in February 1984. Brand currently serves as JSC's Assistant Manager for Space Station Integration and Assembly. He was born on May 9, 1931 in Longmont, CO.

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NASA News

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For Release

Brian Welch
Release No. 89-026

April 27, 1989

FLIGHT CONTROL OF STS-30

Flight control for STS-30, the twenty-ninth voyage of the Space Shuttle, will follow the same procedures and traditions common to all U.S. manned space flights since the Mission Control Center was first used for Gemini IV in 1964.

As on past flights, responsibility for conduct of the mission will revert to the Mission Control Center (MCC) in Houston once Atlantis clears the tower of Launch Pad 39-B at the Kennedy Space Center. Mission support will begin in the MCC about five hours prior to launch and will continue around the clock through the landing and post-landing activities.

The mission will be conducted from Flight Control Room One (FCR-1) on the second floor of the MCC, which is located in Bldg. 30 at Johnson Space Center.

All of the traditional hallmarks of Shuttle missions will be available to news media covering the flight. Throughout the mission, NASA will continue its practice of providing around-the-clock, live release of air-to-ground transmissions between the spacecraft and the MCC. Live views of the activities within FCR-1, alternating with views of the large situation map in Mission Control, will be fed continuously on NASA Select television.

NASA also will hold change-of-shift press conferences with offgoing flight directors, approximately every eight hours, as warranted by mission events and media interest. The press conferences will originate from JSC's News Center in Bldg. 2, Room 135, and will be carried live on NASA Select, with two-way question and answer capability available at Kennedy, the Marshall Space Flight Center and the Dryden Flight Research Facility.

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As in the past, three teams of flight controllers will alternate shifts in the control center and in nearby analysis and support facilities at JSC. The handover between each team takes about an hour and allows each flight controller to brief his or her oncoming colleague on the course of events over the previous two shifts. Change-of-shift press conferences generally take place 30 minutes to an hour after the shift handovers have been completed.

The three flight control teams are referred to as the Ascent/Entry-Orbit 1, Orbit 2 and Planning teams. Generally, the STS-29 crew's working day is split between the Orbit 1 and Orbit 2 shifts.

For STS-30, the ascent phase will be conducted by Flight Director Alan L. (Lee) Briscoe. Once Discovery is in orbit, this same shift, operating from about 7 a.m. to 4 a.m. CDT each day, is known as the Orbit 1 team and will be led by Flight Director Ron Dittmore. Because the shifts overlap in this manner, some of the flight control positions will be staffed by the same personnel for both Ascent/Entry and Orbit 1 operations. Other positions will alternate between specialists in launch/landing activities and orbital operations. Dittmore, for example, will also conduct the entry phase of STS-30.

The Orbit 2 team, led by Lead Flight Director Milt Heflin, will be on-console each day from around 3 p.m. to midnight CDT. The Orbit 2 team has primary responsibility for the deploy of the Magellan spacecraft on Flight Day One.

The Planning Team, led by Flight Director Bill Reeves, will be on-console from about 11 p.m. to 8 a.m. CDT each day. The Planning shift, which for the most part operates during the crew's sleep period, has the dual responsibility for monitoring the systems aboard Discovery and updating schedules or coordinating any changes in the flight plan as may be dictated by real-time mission events.

MCC POSITIONS AND CALL SIGNS FOR STS-29

The flight control positions in the Mission Control Center, their call signs and their functions are:

Flight Director (FLIGHT)

Has overall responsibility for the conduct of the mission.

Spacecraft Communicator (CAPCOM)

By tradition an astronaut; responsible for all voice contact with the flight crew.

Flight Activities Officer (FAO)

Responsible for procedures and crew timelines; provides expertise on flight documentation and checklists; prepares messages and maintains all teleprinter traffic to vehicle.

Integrated Communications Officer (INCO)

Responsible for all Orbiter data, voice and video communications systems; monitors the telemetry link between the vehicle and the ground; oversees the uplink command and control processes.

Flight Dynamics Officer (FDO)

Responsible for monitoring vehicle performance during the powered flight phase and assessing abort modes; calculating orbital maneuvers and resulting trajectories; and monitoring vehicle flight profile and energy levels during reentry.

Electrical, Environmental & Consumables Manager (EECOM)

Responsible for all life support systems, power management, heating and cooling systems, transducers and vehicle lighting; monitors fuel cells; manages consumables.

Payloads Officer (PAYLOADS)

Coordinates all payload activities; serves as principal interface with remote payload operations facilities.

Data Processing Systems Engineer (DPS)

Responsible for all onboard mass memory and data processing hardware; monitors primary and backup flight software systems; manages operating routines and multi-computer configurations.

Propulsion Engineer (PROP)

Manages the reaction control and orbital maneuvering thrusters during all phases of flight; monitors fuel usage and storage tank status; calculates optimal sequences for thruster firings.

Booster Systems Engineer (BOOSTER)

Monitors main engine and solid rocket booster performance during ascent phase.

Guidance, Navigation & Control Systems Engineer (GNC)

Responsible for all inertial navigational systems hardware; monitors radio navigation and digital autopilot hardware systems.

Ground Controller (GC)

Coordinates operation of ground stations and other elements of worldwide space tracking and data network; responsible for MCC computer support and displays.

Maintenance, Mechanical, Arm & Crew Systems (MMACS)

Formerly known as RMU; responsible for remote manipulator system; monitors auxiliary power units and hydraulic systems; manages payload bay and vent door operations.

EVA Specialist (EVA)

A specialty position, activated for planned or contingency extra-vehicular activity; operates from the MMACS console; monitors timeline and all preparations leading up to an EVA; monitors spacesuit parameters and provides ready reference on procedures during an EVA.

Flight Surgeon (SURGEON)

Monitors health of flight crew; provides procedures and guidance on all health-related matters.

Public Affairs Officer (PAO)

Provides real-time explanation of mission events during all phases of flight.

STS-30 FLIGHT CONTROL TEAM STAFFING

| Position | Ascent/Entry | Orbit 1 | Orbit 2 | Planning |
|----------|---|-------------------------|--------------------------------|-----------------------------|
| FLIGHT | Alan L. Briscoe (A) Ron Dittmore (E) | Ron Dittmore | Milt Heflin | Bill Reeves |
| CAPCOM | Frank Culbertson John O. Creighton | Mike Baker David Low | Pierre Thuot Tammy Jernigan | Ken Cameron Steve Oswald |
| FAO | Stephen S. Gibson | Stephen S. Gibson | Neil A. Woodbury | Pete V. Hasbrook |
| INCO | Harry Black | Harry Black | Joe W. Gibbs | Edgar B. Walters |
| FDO | Ed Gonzalez (A) Brian Perry (E) | Matthew R. Abbott | Timothy Brown | Jan McCoy |
| EECOM | Steve McLendon | Steve McLendon | Leonard J. Riche | Ray O. Miessler |
| PAYLOADS | Michael K. Fawcett | Michael K. Fawcett | Neilan E. Cook | J. Mark Childress |
| DPS | Terry W. Keeler | Terry W. Keeler | Gloria Araiza | Mark D. Erminger |
| PROP | Anthony Ceccacci | Anthony Ceccacci | Karen E. Crawford | Sarah A.V. Kirby |
| BOOSTER | Jerry L. Borrer | ////// | ////// | Terri L. Stowe |
| GNC | James M. Webb | James M. Webb | Edward F. Trlica | Charles K. Alford |
| GC | John Snyder | Mike Marsh | Chuck Capps | John Wells |

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IWSA NEWS

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston Texas 77058
AC 713 483-5111

For Release

May 2, 1989
Immediate

Kari Fluegel
Release No. 89-027

JSC ENGINEER CITED FOR TRANSFER OF TRACKING TECHNOLOGY

JSC engineer Shayla Davidson will receive an award from the Federal Laboratory Consortium Wednesday for her role in the transfer of tracking technology that could improve care for Alzheimer's patients. Davidson, along with 30 other individuals across the country, will be presented with the FLC Special Award for Excellence in Technology Transfer May 3 in Chicago.

The Locator System for Wandering Individuals project managed by Davidson, an engineer in the Systems Analysis Office of the Tracking and Communications Division, was a spinoff from tracking and communications advances made by NASA. "The idea for this development was based on a study done by NASA and four health agencies," Davidson said. "The study identified the problem of wandering behavior as a candidate for NASA technology transfer.

"The four health agencies are the Administration on Aging, The National Institute on Disability and Rehabilitation Research, The National Institute on Aging and the Veterans Administration. Cortex Electronics is the manufacturer producing the system.

The system is based on microelectronics and data sequencing technology. A transceiver is worn by the person being monitored. From a base station the transmitter emits a radio frequency signal that is received by the transceiver worn on the person being monitored. The transceiver then transmits a response to the base station where a microcomputer performs the calculations necessary to determine if the person being monitored is beyond the limits set by the base station.

The system provides controlled freedom rather than enforced restriction for the wanderer, self-monitoring and memory training for some wanderers, security and peace of mind for family caregivers, and signal locating and tracking should the older person become lost.

-more-

"The device is small enough to be comfortably worn by the patient," Davidson said. "It allows an electronic system to monitor the patients' location, thus allowing the caregiver more freedom to perform other tasks."

Combining the resources and expertise of five mission agencies and industry to transfer technology was a new approach to spinoffs. The success of the teamwork has become a model for future JSC transfer projects.

"This approach identified the goals for the final product first, then utilized both the technology push -- the NASA technology available -- and the need pull -- an appreciation for NASA technology," Davidson said. "The entire team of technology users, donor and manufacturer was assembled before development began. Davidson said the system is expected to be available no earlier than 1991.

"The health community is very interested in our system and everyone is looking forward to the device being available in the market," she said.

NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
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For Release

Jeffrey Carr
RELEASE NO. 89-028

May 11, 1989
3 p.m. CDT

ASTRONAUTS NAMED TO DOD MISSIONS IN 1990 (STS-38, STS-39)

Shuttle crew members have been named for two Department of Defense-dedicated Shuttle missions scheduled for mid-1990.

USAF Col. Richard O. Covey will command STS-38, a classified DOD mission aboard the Space Shuttle Atlantis, in May of 1990. Covey's pilot will be USN Cmdr. Frank L. Culbertson. Assigned as mission specialists are USMC Col. Robert C. Springer, USAF Maj. Carl J. Meade, and USA Capt. Charles D. "Sam" Gemar.

Named as mission specialists for Shuttle mission STS-39, another DOD mission scheduled for July of 1990, are USAF Col. Guion S. Bluford, Jr., Richard J. Hieb, and Charles Lacy Veach. The remainder of the seven-member crew will be assigned later. The early assignment of mission specialists will provide for long-range crew participation in payload training and integration.

- more -

Covey has flown twice previously as pilot on missions STS-51I in August of 1985, and STS-26 in September of 1988. He was born August 1, 1946, in Fayetteville, AR but considers Fort Walton Beach, FL, to be his hometown.

Culbertson will make his first space flight. He was born May 15, 1949, in Charleston, SC, but considers Holly Hill, SC, to be his hometown.

Springer has flown previously as a mission specialist on STS-29 in March of this year. He was born May 21, 1942, in St. Louis, MO, but considers Ashland, OH, to be his hometown.

Meade will also make his first flight in space. He was born November 16, 1950, at Chanute Air Force Base, IL.

Gemar, also making his first space flight, was born August 4, 1955, in Yankton, SD, but considers Scotland, SD, to be his hometown.

Bluford is a veteran of two shuttle missions, STS-8 in August of 1983, and STS-61A in October of 1985. He was born November 22, 1942, in Philadelphia, PA.

Hieb will make his first trip to orbit. He was born September 21, 1955, in Jamestown, ND.

Veach will also make his first spaceflight. He was born September 18, 1944, in Chicago, IL, but considers Honolulu, HA, to be his hometown.

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

For Release

Jeffrey Carr
RELEASE NO. 89-029

May 12, 1989

NOTE TO EDITORS: STS-30 CREW PRESS CONFERENCE SET FOR MAY 18

The STS-30 astronaut crew will meet with news media on Thursday, May 18 at 9 a.m. CDT to discuss the recent mission which featured the deployment of the Venus radar mapper Magellan.

The press conference will be held at the Johnson Space Center in Building 2, room 135, and will feature a film and slide presentation followed by Q&A with media at participating NASA centers.

The event will be broadcast live on NASA Select television. NASA Select is carried on Satcom F2R transponder 13 (72 degrees W).

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston Texas 77058
AC 713 483-5111

For Release

Jeffrey Carr
RELEASE NO. 89-030

May 16, 1989

NOTE TO EDITORS: STS-30 CREW PRESS CONFERENCE RESCHEDULED

The post-flight press conference with the STS-30 astronauts, originally set for Thursday, May 18 at 9 a.m. CDT, has been rescheduled for 11:30 am CDT the same day.

The press conference will be held at the Johnson Space Center in Building 2, room 135, and will feature a film and slide presentation followed by Q&A with media at participating NASA centers.

The event will be broadcast live on NASA Select television. NASA Select is carried on Satcom F2R transponder 13 (72 degrees W).

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

For Release

Linda Copley

May 17, 1989

RELEASE NO: 89-031

NOTE TO EDITORS

HOUSTON COMMUNITY JOINS JOHNSON SPACE CENTER IN PLANNING TWENTIETH LUNAR LANDING ANNIVERSARY FESTIVITIES

"We choose to go to the moon in this decade and to do other things, not because they are easy but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one we are willing to accept, one we are unwilling to postpone, and one we intend to win." (President John F. Kennedy, in a speech at Rice University in Houston, 1962.)

Friends, family, neighbors, co-workers, and fellow Houston-area residents of those at Johnson Space Center (JSC) who worked to meet that challenge two decades ago will be invited to participate in a major series of celebrations marking the 20th anniversary of the first lunar landing this July.

Houston and the Clear Lake area's Spaceweek activities, which traditionally mark the week of the July 20 lunar landing anniversary observance, will include this year a series of technical briefings, panel discussions, and entertainment events at JSC and in the surrounding communities.

Highlights of those events include:

Briefings: A series of technical briefing and panel discussions by Apollo-era veterans and NASA experts, open to the public, free-of-charge, will be held in JSC's Teague auditorium throughout the week.

One series will deal with the Apollo science program - what we knew about the Moon prior to Apollo; how the landing sites were selected; what we learned about the Moon through Apollo; and what we would hope to learn through future visits.

-more-

Additional briefings by Apollo-era astronauts discussing their missions are also planned. There will also be a panel discussion by leading Apollo managers discussing the decisions and achievements of the program that ushered in a new age of interplanetary horizons over a decade ago.

Entertainment: In a step back in time, an Apollo-era "splashdown" party for current and former NASA employees and contractors, their spouses and guests, is scheduled at the Robert R. Gilruth Recreation Facility at JSC from 4:30-8:30 p.m., on Thursday, July 20. JSC expects as many as 5,000 to attend the evening's festivities.

An event open to the public and free to all will be the lighted boat parade and fireworks display named "A Thousand Points of Light." Planned by the Eagle Twenty Group, a non-profit organization of local Clear Lake businessmen organized to commemorate mankind's first footsteps on the moon, the event will assemble 1,000 boats on Clear Lake for the parade.

At 3:17 p.m. CDT, the exact time of the landing on the moon 20 years ago, the parade of boats will unfurl and fly American flags. At precisely 9:56 p.m. CDT the boats will turn on their lights to commemorate the exact time Neil Armstrong first set foot on the surface of the moon. A fireworks display over the lake will follow.

On Friday, July 21, a gala black-tie anniversary banquet honoring NASA and the Apollo program, with remarks by Walter Cronkite, will take place at 7 p.m. in the Grand Ballroom at the Hyatt Regency Hotel in downtown Houston. The banquet is sponsored by the American Institute of Aeronautics and Astronautics (AIAA) and the Spaceweek National Committee.

A public open house held at JSC on Saturday, July 22 and Sunday, July 23 will kick-off with a parade and rally on JSC grounds Saturday morning. Throughout the entire weekend, from 8:00-5:00 daily, facilities not usually open to the public, as well as special exhibits including a T-38 astronaut training aircraft and a lunar landing training vehicle, will be available for viewing.

The Lunar and Planetary Institute will hold it's first open house in ten years, featuring special tours and exhibits, from 10 a.m. to 6 p.m. on July 22.

Boeing will offer guided tours (by appointment only) of their flight equipment processing facilities at 1045 Gemini, Monday, July 17 through Friday, July 21, from 2 until 3 p.m. daily. Contact Julia Sorrels, 280-2023 for reservations.

For additional information regarding anniversary events in Houston and the Clear Lake area, unless otherwise indicated, contact the following:

- May 26 Apollo 11 Crew 20th Anniversary Press Conference
(in Washington, D.C.), David W. Garrett, NASA
Headquarters, 202-453-8400.
- July 17-21 Boeing Facility Tours, contact Julia Sorrels,
713-280-2023, for reservations.
- July 17 Mission Operations Directorate Hospitality Suite, Contact
Bob Legler, (713) 483-5406.
- July 19 Apollo Recovery Reunion, contact Charles Filley,
(713) 333-3919.
- Computers in Space, Contact Tim Bogart, (713) 280-8566.
- July 20 JSC Splashdown Party, Cathey Lamb, NASA, 713-483-0580.
- Lighted Boat Display and Fireworks - Eagle Twenty
Group, John McLeaish, 713-480-7445 or Bob Taylor,
713-474-3440.
- July 21 Apollo 20th Anniversary Celebration Gala, at
the Hyatt Regency hotel in downtown Houston and
featuring Walter Cronkite as keynote speaker,
AIAA or Spaceweek National Committee, Julia Sorrels,
713-280-2023.
- July 22 JSC Homecoming Parade, Celeste Wilson, NASA,
713-282-1820.
- JSC Homecoming Rally, Celeste Wilson, NASA, 713-282-1820.
- Apollo Spacecraft Program Office Reunion, Patsy
Hall, 483-0824.
- Lunar and Planetary Institute Open House, Beth Williams,
486-2157.

Information regarding any changes to NASA-sponsored events listed on the following Lunar Landing Anniversary events agenda is available by calling the JSC News Center at (713) 483-5111.

JOHNSON SPACE CENTER
APOLLO 20TH ANNIVERSARY EVENTS

July 15-23, 1989

SATURDAY, July 15

- 8: a.m. Lunar Rendezvous Space Race
JSC Gilruth Center
- 9 a.m. Aerospace and Air Exhibit,
Ellington Field, Houston,
sponsored by the Civil Air Patrol

MONDAY, July 17

- 11 a.m. - 2 p.m. Speakers Program, Teague Auditorium
"THE MOON BEFORE APOLLO"
Concepts about the origin,
evolution, and composition of
the Moon. Unmanned precursor
missions (Orbiter, Ranger, Surveyor)
- 2 - 3 p.m. Boeing facility guided public
tours of the flight processing
facility, Monday-Friday, July 17-21.
Contact Julia Sorrels, 713-280-
2023, for reservation.
- 3 - 4:30 p.m. "FOR ALL MANKIND", Al Reinhart's
90-minute feature film on manned
lunar exploration, Teague auditorium
daily, July 17-21, 3-4:30 pm;
evenings July 17 and 21.
- 7 - 11 p.m. Mission Operations Directorate
Hospitality Suite, Kings Inn
- 7:30 - 9 p.m. "FOR ALL MANKIND", Teague Auditorium

TUESDAY, July 18

11 a.m. - 2 p.m.

Speakers Program, Teague Auditorium
"PLANNING THE APOLLO MISSIONS"

Mission operations,
communications, guidance, software,
propulsion, thermal protection and
landing dynamics discussed by key
project engineers

3 - 4:30 pm

"FOR ALL MANKIND"

WEDNESDAY, July 19

10 a.m. - 9 p.m.

"COMPUTERS IN SPACE" All day series
of lectures and videotapes and film
presentations. Luncheon speaker -
John Garman \$5. Dinner speaker -
Norm Thagard \$7. Both - \$11.50
Reservations by mail only:
CLC/ACM, 17629 El Camino,
Suite 310, Houston, TX 77058,
Attn: Susan Porter. Deadline 7/11/89

11 a.m. - 2 p.m.

Speakers program, Teague auditorium
"FLYING THE APOLLO MISSIONS"

Program summary from the
perspective of Apollo Flight
Directors.

3 - 4:30 p.m.

"FOR ALL MANKIND", Teague Auditorium

7 p.m.

Apollo Recovery Reunion, all navy
personnel who participated in the
recovery operations during the
Apollo flights are invited.

6:30 - 9 p.m.

Missions Operations Directorate
Lunar Landing Party, Gilruth
Recreation Center, dinner and
dancing, music by "Contra-Band,"
attendance by invitation.

THURSDAY, July 20

9 a.m. - 2 p.m.

Spaceflight Recovery Seminar,
Gilruth Recreation Center, Room 217

11 a.m. - 2: p.m.

Speakers program, Teague auditorium
"APOLLO SCIENTIFIC RESULTS"

Leading lunar and planetary
scientists from the Apollo era
discuss mission preparation,
scientific results and plans for
future exploration.

3 - 4:30 p.m.

"FOR ALL MANKIND", Teague Auditorium

4:30 - 8:30 p.m.

"Splashdown" party, Gilruth
Recreation Center. Patterned after
the informal, spontaneous parties
that followed each of the Apollo
missions. Attendees will include
current and former NASA employees
and contractors as well as their
spouses or adult guests. The
Apollo 11 crew and Walter Cronkite
have accepted invitations to attend.

9 p.m.

"1,000 Points of Light"
Community-sponsored lighted boat
display, fireworks and laser light
show on Clear Lake

FRIDAY, July 21

9 - 11 a.m.

HEALTHCARE SYMPOSIUM, Teague
Auditorium

Forum held by members of St. John,
Humana, and Memorial Hospitals to
discuss medical spinoffs from space
technology

Three health units will be open to
the public for various kinds of
medical screenings free of charge;
medical spinoff exhibits will be
displayed in the west corridor of
the Visitor Center

11 a.m. - 2 p.m. Speakers program, Teague auditorium
"THE MOON AS SEEN BY APOLLO
ASTRONAUTS"

Apollo missions from the perspective
of the astronauts who flew them

3 - 4:30 p.m. "FOR ALL MANKIND", Teague Auditorium

7 p.m. GALA
Dinner and dancing at the Hyatt
Regency Grand Ballroom. Remarks by
Walter Cronkite. Sponsored by AIAA
and Spaceweek National Committee.
Black tie

7:30 - 9 p.m. "FOR ALL MANKIND", Teague Auditorium

SATURDAY, July 22

8 a.m. - 5 p.m. JSC OPEN HOUSE
Featuring special Apollo exhibits
and facilities not normally open to
the public, plus films and live
entertainment

"FOR ALL MANKIND", (Shown throughout
weekend, check visitors schedules in
B. 2).

9:30 - 11:30 a.m. JSC Homecoming Parade begins at
Gilruth Center through JSC, ending
in Rocket Park

11:30 a.m. - noon JSC Homecoming Rally (in Rocket Park)

time TBD Model Rocket Launch (in Rocket Park)

4 - 7 p.m. Apollo Spacecraft Program Office
Reunion
-more-

10 a.m. - 6 p.m. Lunar and Planetary Institute Open
House. First open house in ten years
will feature special tours and
exhibits.

SUNDAY , JULY 23

9 a.m. - 4 p.m. JSC OPEN HOUSE

NASA NEWS

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
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For Release

May 26, 1989

Linda M. Copley
RELEASE NO:89-032

NOTE TO EDITORS: GROUNDBREAKING OF AUXILIARY CHILLER FACILITY

NASA's Johnson Space Center will hold a groundbreaking ceremony for its new auxiliary chiller facility, Building 28, at 9:35 a.m., Thursday, June 1.

The 8,400 square foot facility, which will provide 4,000 additional tons of chilled water to the over 14,000 tons available to provide cooling to the center at this time, should be completed by July 3, 1990.

Building 28 was designed by the architectural firm of Lockwood, Andrews & Newnam of Houston. The \$7 million construction contract was awarded to Harrop Construction, also of Houston.

JSC Center Director Aaron Cohen, Kenneth Gilbreath, director of the center operations directorate, and Barry Wittschen, NASA project manager, will be joined by Burt Harrop, president of Harrop Construction Company, and Jim Wilhelm, president, Lockwood, Andrews & Newnam, in the ceremony.

The event will take place at the site location on Fifth street, directly north of the parking lot on the north side of Bldg. 35.

The facility will contain two 2,000 ton electrically driven chillers. New chilled water pumps, cooling water pumps, piping, cooling towers, transformers, and metal-clad switchgear with vacuum breakers to power the new chillers will be installed.

The project also provides the piping and valves required to connect the new facility to the existing water distribution system.

-end-

NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
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For Release
June 7, 1989

Billie A. Deason
RELEASE: 89-033

ASTRONAUT HARTSFIELD TO HEAD SPACE FLIGHT/SPACE STATION INTEGRATION

Veteran Astronaut Henry Hartsfield has been assigned temporary duty in the Office of Space Flight, NASA Headquarters, Washington, D.C., effective immediately.

Hartsfield will serve as director of the Space Flight/Space Station Integration Office, reporting directly to the Associate Administrator for Space Flight.

Hartsfield replaces Astronaut Robert Parker who has returned to the Johnson Space Center to begin training for his mission specialist assignment on shuttle mission STS-35 scheduled for launch in Spring 1990.

The Space Flight/Space Station Integration Office was established in 1987 to facilitate integration of the Space Station and its unique requirements into the space transportation system. The office coordinates the exchange of information between the two programs and serves as a forum for resolving technical and programmatic issues.

Hartsfield began his Air Force career in 1955 and is a graduate of the USAF Test Pilot School at Edwards AFB, California. He was an instructor there prior to his assignment in 1966 to the USAF Manned Orbiting Laboratory (MOL) Program as an astronaut. After cancellation of the MOL Program in June 1969, he was reassigned to NASA. Hartsfield retired from the Air Force in August 1977, and remained in the astronaut corps. He was pilot for STS-4 in June/July 1982, and commanded shuttle missions STS 41-D in September 1984 and STS 61-A in November 1985. Hartsfield's most recent assignment was Deputy Director for Flight Crew Operations at the Johnson Space Center.

In addition to other awards, he received the NASA Distinguished Service Medals in 1982 and 1988 and the NASA Exceptional Service Medal in 1988.

-end-

NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

For Release

Jeffrey Carr
RELEASE NO. 89-034

June 9, 1989
10:30 am CDT

ASTRONAUT "PINKY" NELSON TO LEAVE NASA

Three-time space flight veteran George D. "Pinky" Nelson, Ph.D., will leave NASA on June 30 to accept academic and administrative posts at the University of Washington in Seattle. Nelson has been named Assistant Provost at the university as well as an associate professor of Astronomy.

Nelson joined NASA with the first Shuttle-era astronaut selection in January 1978. While awaiting a flight crew assignment, he flew as scientific equipment operator aboard the WB-57F high altitude research airplane, flew as chase plane photographer for Shuttle mission STS-1, and served as support crewman and Capcom for missions STS-3 and STS-4.

He made his first flight as a mission specialist aboard the Space Shuttle Challenger on mission STS 41-C in April 1984. The 41-C crew successfully deployed the Long Duration Exposure Facility (LDEF) and retrieved, repaired, and replaced into orbit the ailing Solar Maximum Satellite. Nelson flew the Manned Maneuvering Unit (MMU) and, with fellow crewman James "Ox" van Hoften, repaired and deployed the Solar Max during two spacewalks in the first space salvage operation in history.

Nelson flew again in January 1986 aboard Columbia on mission STS 61-C which featured the deployment of the SATCOM KU satellite, experiments in astrophysics and materials processing, and a night landing at Edwards Air Force Base.

In September 1988, Nelson made his third flight as a mission specialist aboard Discovery on the first post-Challenger mission, STS-26. Discovery's crew successfully deployed the Tracking and Data Relay Satellite (TDRS-C) and operated eleven mid-deck scientific experiments in returning the nation's Space Transportation System to flight.

(more)

"I am excited with the prospects of a new challenge at the University of Washington in Seattle", Nelson said. "At the same time, I know that I will miss NASA and the Johnson Space Center, especially the people. I don't think there is a more dedicated, motivated, and skilled group around. Thanks to everyone for making the past eleven years so enjoyable."

He added, "I hope to continue to promote the space program in my new career, because I believe that the exploration of space and the development of new technology is key to the future success of our civilization."

Nelson has a total of 411 hours in space aboard three different Shuttle orbiters, including 10 hours EVA (spacewalk) time.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
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For Release

Kari Fluegel
RELEASE No. 89-035

June 16, 1989
Immediate

SATELLITE SERVICING CONFERENCE BEGINS WEDNESDAY AT JSC

Representatives from industry, academia and government will gather at NASA's Johnson Space Center June 21-23 for a three-day workshop to exchange information and discuss ideas for the on-orbit servicing of satellites.

The Satellite Services System workshop, supported by the Advanced Programs Development Division of the NASA's Office of Space Flight, will focus on four issues: servicer/satellite design, servicing operations, tools and equipment, and future opportunities.

The workshop is a joint effort by government and industry. It is unclassified and open to the aerospace community. All technical session will be in Teague Auditorium.

The workshop begins June 21 with a welcome by JSC Director Aaron Cohen at 9 a.m. followed by a keynote address by Darrell Branscome, director of the Advanced Programs Development Division.

Also Wednesday, a presentation by astronauts Capt. Bruce McCandless II and Jerome Apt about the space shuttle experience will be at 9:30 a.m.

That presentation will be followed by a discussion of space station considerations at 11 a.m. with Robert E. Bobola, project manager for development in the Space Station Projects Office at JSC; Randy Waibel of MacDonnell Douglas; and Don Peterson of General Electric Astro Space.

The first session will begin at 1 p.m. with a focus on satellite design. Session leaders will be Ed Falkenhayn of the Goddard Space Flight Center and Robert Radtke of Tracor Applied Sciences. Session topics include Orbital Manuevering Vehicle

-more-

(OMV) usage, the Flight Telerobotic Servicer, Advanced X-Ray Astrophysics Facility servicing design concepts and servicing polar platforms.

Also Wednesday, participants may observe demonstrations of the Hubble Space Telescope, OMV pilot simulator and the Automatic Umbilical Connector/Manipulator Development Facility.

On June 22, Session II: Servicing Operations will begin at 8:30 a.m., followed by a Session III: Tools and Equipment at 1 p.m.

Stephen Elrod of the Marshall Space Flight Center and Sue Boyd of JSC will lead the servicing operations discussions which will include servicing Eureka-type platforms, OMV background and status, combining teleoperation with autonomous robot control for satellite servicing, and orbital fluid resupply development activities.

Neville Marzwell of the Jet Propulsion Laboratory, Richard Fullerton of JSC and Michael Withey of ILC Space Systems will lead the discussion on tools and equipment. Among the topics in Session III are task space coordination of multiple robotic arms manipulating the same payload in an orbital environment, the Astronautics Dexterous Anthropomorphic Manipulator System development of a teleoperated servicing system, magnetic end effectors for space operations, and superfluid helium resupply coupling.

Session IV: Future Opportunities opens the day June 23 at 8 a.m. with a focus on presentations from representatives from NASA, the military, commercial programs, Canada, Japan and Europe.

Session leaders will be Major Neal Ely of the United States Air Force and Steve Hoffman of Science Applications International Corporation.

Additional topics will be discussed in each of the four session.

The workshop will conclude with a summary of session findings and discussion of key issues at 11 a.m. June 23.

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For Release

Jeffrey Carr
RELEASE NO. 89-036

June 17, 1989

ASTRONAUT S. DAVID GRIGGS KILLED IN AIR CRASH

Veteran Shuttle astronaut Rear Admiral S. David Griggs, USNR, was killed today when the North American AT-6 vintage trainer airplane he was flying crashed near Earle, Arkansas. Griggs was alone in the airplane when the accident occurred about 9:15 am cdt.

Griggs joined NASA in 1970 as a research pilot in the Johnson Space Center's Aircraft Operations Division. He served as project pilot for the shuttle trainer aircraft and later as Chief of the Shuttle Training Aircraft Operations Office before being selected as an astronaut candidate in 1978.

He made his first spaceflight in April, 1985, as a mission specialist aboard Discovery on mission STS 51-D, during which Griggs conducted the first unscheduled spacewalk in history.

Griggs had been in training as pilot for Shuttle mission STS-33, a classified Department of Defense flight aboard Discovery, scheduled for November of this year.

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NASA News

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For Release

Linda Copley
RELEASE NO: 89-037

June 20, 1989

JSC CHILD CARE FACILITY GROUND BREAKING

The formal ground breaking of an on-site child care center for Johnson Space Center employees is scheduled for 2:00 p.m., Friday, June 23. The short ceremony, conducted by Center Director Aaron Cohen, will be held at the construction site at the corner of Second Street and Avenue B, at the north end of the center. The facility is scheduled to open in May, 1990.

The as-yet-unnamed facility will be operated as a non-profit corporation registered under the name of Space Family Education, Inc. and managed by an elected board of directors. Membership in the corporation will be open to all federal employees, military personnel, JSC Exchange employees, and on-site contractor employees working at JSC.

The 3,600 square foot facility will be located on a 1.89 acre site near the Gilruth Recreation Center. The building is estimated to cost \$304,000, which will be funded by the center.

An additional expense to provide start-up operating capital and purchase necessary furnishings and equipment will be raised by donations, and by the fund-raising efforts of Space Family Education, Inc.

The project proposal received final approval by center management in May, after the conclusion of nine-month study by an all-volunteer employee committee to determine the need and feasibility of locating and operating the facility on site.

"The goal will be to provide quality child care at a reasonable cost, and to raise the necessary funds to furnish and enhance the facility," said Mary Allen, manager of the employee services section, Human Resources, and chairman of the operations panel of the current JSC child care committee.

A feasibility study conducted among the 7,000 employees working on-site at JSC found 89 percent of the 2,170 employees responding considered child care an appropriate service for the government to offer its employees.

The results of the survey indicated the most important factors for JSC employees in choosing child care facilities were: 1) staff education and experience; 2) the ratio of caregivers to children; 3) the quality of the educational programs provided; and tied for 4) cost, and convenience of location.

"In addition to conducting the survey, the initial committee also looked at the child care facilities in operation at other NASA centers, including Goddard Space Flight Center, MD; Lewis Research Center, OH; Ames, Research Center, CA; Langley Research Center, VA, and Marshall Space Flight Center, AL. (Stennis Space Center, MS; will open its child development center this fall, and plans for such a facility are currently under way at Kennedy Space Center, FL.

The majority of those facilities operate as separate, non-profit organizations. After considering other options, including contracting a national child care chain to run the facility as NASA's Marshall Space Flight Center has done, the JSC committee decided to establish Space Family Education, Inc. as a non-profit corporation.

"The committee's objective was to find a means to provide quality child care at a reasonable cost," said Allen. "Forming a non-profit corporation will help: 1) contain the costs, since we will not have to worry about a profit margin; 2) keep control within the JSC family, since the parents, as members of the corporation, will help to set policy and maintain quality, and 3) to insure staff quality, since because of the non-profit nature of the corporation, more funds will be available to hire a better educated and experienced staff," she explained.

The committee conducted a phone survey of 31 of the 42 child care centers within a five mile radius of JSC, including Friendswood. The results indicated that while care was generally available (except for infants), only a small number of centers exceeded the Texas state requirements, which are among the lowest in the nation.

Although specific policies and procedures will be decided by the membership, tentative plans call for the facility to operate by the standards set by the National Association for the Education of Young Children (NAEYC) in terms of staff qualifications and child-to-caregiver ratios. Based on those standards, the center initially plans to provide care for 62 children between the ages of six weeks and five years of age.

Current plans call for the facility to operate from 7 a.m. to 5:30 p.m. daily, Monday-Friday, closed on government holidays. Two snacks will be provided daily. Lunches are to be brought from home and may be microwave-heated by staff members, if desired.

The proposed rates, which are subject to the final approval of the corporation membership, are competitive with commercial child care providers in the Clear Lake area, approximately \$70-\$80 per child per week for infants, and \$60-70 per week per child for toddlers and pre-schoolers.

"Our current plan includes 11 full time and 2 part time employees, with all teachers having at least Associates degrees in Early Childhood Education (NAEYC)," said Allen. "In following the NAEYC standards, we will be providing one of the lowest child to caregiver ratios in the area: 1-4 (infants), 1-6 (toddlers), and 1-10 (preschoolers).

Because there was no suitable existing building available on site, the committee consulted with JSC's Facility Development Division on the construction options and location site open to them. The site near the Gilruth Center was chosen because of its accessibility, and lack of severe traffic congestion during the peak drop-off and pick-ups times of the day.

The building will be a modular design, which can be eventually be expanded if necessary. There are individual rooms for each of the different age groups and a kitchen and dining area. A large outside playground will feature outmoded space station mock-ups which have been modified to fit the safety requirements of young children.

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For Release

Kari Fluegel
RELEASE: 89-038

June 20, 1989

TWO COMPANIES CHOSEN FOR WORK ON LIFE SCIENCE SATELLITE

NASA's Johnson Space Center, Houston, has selected two companies to continue the study and design of an unmanned, reusable reentry satellite called LifeSat (Life Science Satellite).

General Electric, Reentry Systems Department, Philadelphia, and Science Applications International Corp., Torrance, Calif., were chosen for the two parallel \$900,000 contracts. The 1-year agreements are tentatively scheduled to start July 3, 1989.

LifeSat will carry life science payloads and could significantly expand NASA's capability to investigate the biological effects of microgravity and the unique space radiation environment. This type of investigation can be calculated only in space, preferably in polar orbits. LifeSat will be used primarily in the fields of life sciences and materials processing.

LifeSat will fly experiments in a variety of orbits, including those providing high doses of radiation, for up to 60 days, and perhaps longer. It would be placed into Earth orbit by an expendable launch vehicle, reserving the Space Shuttle for activities requiring crew presence. Upon completion of the mission, LifeSat would reenter the atmosphere and soft-land at a designated ground-site where scientists and engineers would have immediate access to the experiments.

The request for proposals, released in January, called for the design of a reusable spacecraft that could be processed and readied for reflight in 2 months, allowing for several flights each year.

The project is managed by the Flight Projects Office of the New Initiatives Office at the Johnson Space Center.

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For Release

Linda Copley
RELEASE NO: 89-039

June 23, 1989

NOTE TO EDITORS:
JSC CHILD CARE FACILITY GROUND BREAKING RESCHEDULED

The formal ground breaking of an on-site child care center for Johnson Space Center employees has been rescheduled for 2:00 p.m., Friday, July 7. The short ceremony, conducted by Center Director Aaron Cohen, will be held at the construction site at the corner of Second Street and Avenue B, at the north end of the center. The facility is scheduled to open in May, 1990.

-end-

NASA News

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For Release

Jeffrey Carr
RELEASE NO. 89-040

June 29, 1989
3:00 pm CDT

PARTIAL SHUTTLE CREW ASSIGNMENTS ANNOUNCED Blaha to Replace Griggs; Gutierrez, Cleave, Thagard Assigned

USAF Col. John E. Blaha has been named to the flight crew of Shuttle mission STS-33, a Department of Defense dedicated flight set for November 19, this year. He replaces USNR Rear Admiral S. David Griggs, who was killed on June 17 when the private plane he was flying crashed in eastern Arkansas.

Blaha had previously been assigned as the pilot for STS-40, a space and life sciences dedicated mission (SLS-1).

He joins crew commander USAF Col. Frederick D. Gregory and mission specialists F. Story Musgrave, M.D., Kathryn C. Thornton, Ph.D., and USN Capt. Manley L. "Sonny" Carter, Jr., M.D., who have been in training since November, last year. The replacement is not expected to impact the launch date.

Replacing Blaha as pilot for STS-40 is USAF Maj. Sidney M. Gutierrez. Set for launch in August, 1990, the 7-day flight will feature space and life sciences studies in the SLS-1 laboratory module aboard the space shuttle Columbia.

Gutierrez joins crew commander USMC Col. Bryan D. O'Connor, mission specialists M. Rhea Seddon, M.D., James P. Bagian, M.D., and Tamara E. Jernigan, Ph.D., and payload specialists F. Drew Gaffney, Ph.D., and Robert W. Phillips, Ph.D. All had been previously named.

In another flight crew assignment, Mary L. Cleave, Ph.D., and Norman E. Thagard, M.D., have been named as mission specialists for STS-42, a nine-day flight aboard Columbia, set for December, 1990. The partial crew assignment will allow for long range crew participation in payload training and integration associated with the International Microgravity Laboratory (IML-1). The remainder of the 7-member crew will be named later.

-more-

Blaha made his first space flight as pilot aboard Discovery on mission STS-29 in March, this year. He was born August 26, 1942, in San Antonio, TX.

Gutierrez, making his first flight in space, was born June 27, 1951, in Albuquerque, NM.

Cleave will make her third space flight, having flown previously as mission specialist on STS 61-B in November, 1985, and on STS-30 in May, this year. She was born February 5, 1947, in Southampton, NY.

Thagard will make his fourth space flight. He flew as mission specialist on STS-7 in June, 1983, on STS 51-B in April, 1985, and on STS-30 in May, this year. Thagard was born July 3, 1943, in Marianna, FL, but considers Jacksonville, FL, to be his hometown.

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SHUTTLE FLIGHT WS IN TRAINING
(as of 29/89)

| FLIGHT CREW - DATE | RANK (BRANCH) | CLASS | FLT EXPERIENCE |
|----------------------------------|---------------------------|-------|----------------|
| <u>STS-28 (DOD) 7/31/89</u> | | | |
| Brewster H. Shaw | CDR Col. (USAF) | 1978 | STS-9; 61-B |
| Richard N. Richards | PLT Cmdr. (USN) | 1980 | |
| James C. Adamson | MS1 Lt. Col. (USA) | 1984 | 41-G |
| David C. Leestma | MS2 Cmdr. (USN) | 1980 | |
| Mark N. Brown | MS3 Maj. (USAF) | 1984 | |
| <u>STS-34 (Galileo) 10/12/89</u> | | | |
| Donald E. Williams | CDR Capt. (USN) | 1978 | 51-D |
| Michael J. McCulley | PLT Cmdr. (USN) | 1984 | |
| Shannon W. Lucid | MS1 Civilian - Ph.D. | 1978 | 51-G |
| Franklin R. Chang-Diaz | MS2 Civilian - Ph.D. | 1980 | 61-C |
| Ellen S. Baker | MS3 Civilian - M.D. | 1984 | |
| <u>STS-33 (DOD) 11/19/89</u> | | | |
| Frederick D. Gregory | CDR Col. (USAF) | 1978 | 51-B |
| John E. Blaha | PLT Col. (USAF) | 1980 | STS-29 |
| Manley L. Carter | MS Capt. (USN) - M.D. | 1984 | |
| F. Story Musgrave | MS Civilian - Ph.D.; M.D. | 1967 | STS-6; 51-F |
| Kathryn C. Thornton | MS Civilian - Ph.D. | 1984 | |
| <u>STS-32 (LDEF) 12/18/89</u> | | | |
| Daniel C. Brandenstein | CDR Capt. (USN) | 1978 | STS-8; 51-G |
| James D. Wetherbee | PLT Lt. Cmdr. (USN) | 1984 | |
| Bonnie J. Dunbar | MS Civilian - Ph.D. | 1980 | 61-A |
| G. David Low | MS Civilian | 1984 | |
| Marsha S. Ivins | MS Civilian | 1984 | |

FLIGHT CREW - DATE

STS-36 (DOD) 2/01/90

John O. Creighton CDR
 John H. Casper PLT
 David C. Hilmers MS
 Richard M. Mullane MS
 Pierre J. Thuot MS

Capt. (USN)
 Col. (USAF)
 Lt. Col. (USMC)
 Col. (USAF)
 Lt. Cmdr (USN)

1978
 1984
 1980
 1978
 1985

51-G
 51-J; STS-26
 41-D; STS-27

STS-31 (Hubble) 3/26/90

Loren J. Shriver CDR
 Charles F. Bolden PLT
 Steven A. Hawley MS
 Kathryn D. Sullivan MS
 Bruce McCandless MS

Col. (USAF)
 Col. (USMC)
 Civilian - Ph.D.
 Civilian - Ph.D.
 Capt. (USN)

1978
 1980
 1978
 1978
 1966

51-C
 61-C
 41-D; 61-C
 41-G
 41-B

STS-35 (ASTRO-1) 4/26/90

Vance D. Brand CDR
 Guy S. Gardner PLT
 John M. Lounge MS
 Jeffrey A. Hoffman MS
 Robert A.R. Parker MS
 Ronald A. Parise PS
 Samuel T. Durrance PS

Civilian
 Col. (USAF)
 Civilian
 Civilian - Ph.D.
 Civilian - Ph.D.
 Civilian - Ph.D.
 Civilian - Ph.D.

1966
 1980
 1980
 1978
 1967

ASTP; STS-5; 41-B
 STS-27
 51-I; STS-26
 51-D
 STS-9

STS-37 (GRO) 6/04/90

Steven R. Nagel CDR
 Kenneth D. Cameron PLT
 Jerry L. Ross MS
 Jerome Apt MS
 Linda M. Godwin MS

Col. (USAF)
 Lt. Col. (USMC)
 Lt. Col. (USAF)
 Civilian - Ph.D.
 Civilian - Ph.D.

1978
 1984
 1980
 1985
 1985

51-G; 61-A
 61-B; STS-27

FLIGHT CREW - DATE RANK (NCH) CLASS FLT EXPERIENCE

STS-38 (DOD) 7/09/90

Richard O. Covey CDR 1978 51-I; STS-26
 Frank L. Culbertson PLT 1984
 Robert C. Springer MS 1980 STS-29
 Carl J. Meade MS 1985
 Charles D. Gemar MS 1985

STS-40 (SLS-1) 8/16/90

Bryan D. O'Connor CDR 1980 61-B
 Sidney M. Gutierrez PLT 1984
 M. Rhea Seddon MS 1978 51-D
 James P. Bagian MS 1980 STS-29
 Tamara E. Jernigan MS
 F. Drew Gaffney PS
 Robert W. Phillips PS

STS-39 (IBSS) 11/01/90

TBD CDR
 TBD PLT
 Guion S. Bluford MS STS-8; 61-A
 Richard J. Hieb MS
 Charles L. Veach MS
 TBD MS
 TBD MS

STS-42 (IML-01) 12/06/90

TBD CDR
 TBD PLT
 TBD MS
 Mary L. Cleave MS 1980 61-B; STS-30
 Norman E. Thagard MS 1978 STS-7; 51-B; STS-30
 TBD PS
 TBD PS
 ESA or NASA
 National Research Council of Canada

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Steve Nesbitt

For Release

RELEASE NO. 89-041

August 4, 1989

EDUCATORS ATTEND NASA HONORS TEACHER WORKSHOP

Carmen S. Zuniga, a first grade teacher at Storm Elementary School in San Antonio, Texas, recently completed a two-week space science education workshop at the NASA Johnson Space Center in Houston, Texas.

Selected from throughout the United States, 23 teachers received an overview of the latest space technology developments from engineers, scientists, astronauts and researchers at JSC during the July 24-Aug. 4 workshop. Each participant maintained a journal of activities and observations for use in developing classroom teaching materials.

JSC's space science education specialists also provided teachers with printed materials, computer programs and audiovisual aids for use in classrooms.

Workshop participants were chosen for their interest in space sciences and in professional growth.

-end-

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For Release

Jeffrey Carr
RELEASE NO. 89-042

8/16/89

BRYAN O'CONNOR NAMED DEPUTY DIRECTOR OF FLIGHT CREW OPERATIONS

Veteran shuttle astronaut USMC Col. Bryan D. O'Connor has been named Deputy Director of the Flight Crew Operations Directorate at the Johnson Space Center, effective immediately.

He replaces another veteran astronaut, Henry W. Hartsfield, Jr., who was recently assigned to the Office of Space Flight at NASA Headquarters as Director of the Space Flight/Space Station Integration Office.

O'Connor began his military career with the U.S. Marine Corps after graduation from the U.S. Naval Academy in 1968. He flew A-4 Skyhawk light-attack aircraft at El Toro, CA, before being assigned to the first Harrier squadron in Beaufort, SC, with whom he completed a six-month cruise aboard the USS GUAM in the Mediterranean.

After graduation from the U.S. Navy Test Pilot School, O'Connor served as a test pilot with the Naval Air Test Center's Strike Test Directorate at Patuxent River, MD. He also served as project pilot for AV-8 Harrier projects during his assignment there.

O'Connor was selected as an astronaut in 1980. He served as T-38 chase pilot for STS-3, and as Capcom for STS-5 through STS-9. His first space flight was in November, 1985, as pilot of the Space Shuttle Atlantis on mission STS-61B during which the crew deployed three communications satellites and demonstrated Space Station assembly techniques.

After the Challenger accident, O'Connor served as Assistant to the Shuttle Program Manager until February, 1988, and as Chairman of NASA's Space Flight Safety Panel until February, 1989.

In addition, O'Connor will continue to train as the commander of Shuttle flight STS-40, the space and life sciences mission SLS-1, which is scheduled for August of next year.

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(43)

Steve Nesbitt
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August 17, 1989
IMMEDIATE

VOYAGER NEPTUNE ENCOUNTER EVENTS OPEN TO THE PUBLIC

The public will be able to share in the experience of the Voyager spacecraft's close pass by the planet Neptune through events planned this month at the NASA Johnson Space Center and the University of Houston-Clear Lake.

Voyager's closest approach to the planet will come Thursday as it passes within approximately ~~30,000~~_{3,000} miles of Neptune.

Each weekday from noon to 1 p.m. August 21 - 29 the Teague Auditorium at JSC will be open to the public and will feature a review of the previous day's Voyager Neptune encounter activities including new images from the spacecraft and commentary by scientists. Dr. Faith Vilas with JSC's Solar System Exploration Division will provide commentary for all noon sessions except Aug. 21 which will feature astronaut and planetary scientist Dr. Jerome Apt.

Live video from Voyager will be shown during evening sessions August 21, 25 and 29 from 6 - 7:30 p.m. Scientists will again be present to conduct a discussion of the mission and answer questions.

The Lunar and Planetary Institute, the University of Houston-Clear Lake and JSC will co-sponsor a lecture and panel discussion of the Neptune encounter Sunday, August 27 from 3:30 - 5 p.m. Dr. David Black, director of the Lunar and Planetary Institute, and a panel of planetary scholars and scientists will describe and interpret the Voyager flyby for the public. The event will be held in the UH-CL auditorium, 2700 Bay Area Blvd.

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For Release
IMMEDIATE

NOTE TO EDITORS: STS-34 BRIEFINGS, CREW CONFERENCE SET

The background briefings and astronaut press conference for STS-34, the Oct. 12 flight of the Space Shuttle Atlantis, are scheduled for September 5 and 6 at the NASA Johnson Space Center in Houston.

STS-34 will deploy the Galileo spacecraft to study the planet Jupiter.

A mission overview with the lead flight director and Galileo spacecraft mission manager will begin at 12:30 p.m. CDT Sept. 5 followed at 2 p.m. by a briefing from the Galileo mission scientist of the scientific observations to be made by the planetary probe. Briefings on other payloads and experiments to be carried on Atlantis will follow. All briefings are to be held in Room 135 of Building 2 at JSC.

The astronaut crew of STS-34 will hold a press conference at 10:15 a.m. September 6, also in Room 135.

All briefings will be carried live on NASA Select television via Satcom F2R (transponder 13). Two-way Q&A will be provided at NASA Headquarters in Washington, D.C., the Jet Propulsion Laboratory in Pasadena, CA, the Kennedy Space Center in Florida, and the Marshall Space Flight Center in Huntsville, AL.

August 24, 1989

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NASA News

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AC 713 483-5111

For Release

Linda Copley

August 31, 1989

RELEASE NO. 89-045

JSC CONTRACTS FOR ENGINEERING COMPUTATION FACILITY WITH GRUMMAN DATA SYSTEMS

NASA's Johnson Space Center has entered into a contract with Grumman Data Systems Corporation, Woodbury, NY, for an Engineering Computation Facility (Class VI Computer System). The system will be located in JSC's Bldg. 46 Computer Facility.

The firm-fixed-price contract is for the period of August 25, 1989, through September 30, 1990, with a value of \$11,118,323. If all subsequent options are exercised the total firm-fixed-price will be \$47,682,033, for a period not to exceed 60 months.

The contract is an agreement for lease-to-ownership of the Class VI system and includes installation and integration of the system components, as well as analyst support services. NASA will own the equipment in the event that the renewal options are exercised.

The contract was awarded as a result of conversion of a two-step invitation for bid to a single source negotiated procurement.

The Engineering Computation Facility, "a supercomputer," was acquired by JSC for engineering analysis and numeric simulation in the areas of stress, fluid dynamics, thermodynamics, aerodynamics, guidance, navigation, and control of large spacecraft structures.

The use of this supercomputer will allow JSC's engineering and scientific staff to improve their computational capability by reducing calculation times significantly. The resulting improved analyses techniques will provide better definition of expected loads and help increase spacecraft performance, which may result in larger payloads and higher orbits.

-end-

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For Release

9/08/89

Jeffrey E. Carr
RELEASE NO. 89-046

ASTRONAUT CLASS OF 1990 SELECTION UNDERWAY

Screening of applications for the astronaut class of 1990 is underway in the first of what will become regular bi-annual selections. According to statistics compiled by the Astronaut Selection Office at the Johnson Space Center, nearly 2,500 applications were received prior to the June 30 deadline.

The two-year hiring cycle was adopted last year in order to assure NASA's ability to meet flight crew requirements while minimizing the impact on center resources, according to Donald Puddy, Director of Flight Crew Operations.

The Astronaut Selection Board is chaired by Puddy, and members include Director of Life Sciences Carolyn Huntoon, Chief of Equal Opportunity Programs Joseph Atkinson, Chief of the Astronaut Selection Office Duane Ross, and a number of senior representatives of the Astronaut Office.

"When you interview a hundred people or so, you tie up key center personnel full-time for up to five weeks", said Puddy. "With the standardized two-year cycle, managers know what to expect and can plan for the increased workload."

Preliminary screening is done by the Astronaut Selection Office and has already been completed, with 1,945 applicants meeting the minimum qualifications for pilots or mission specialists.

The second screening phase consists of a more detailed review of applications by a JSC rating panel to determine which applicants are most exceptionally qualified, based on such factors as performance, acquired responsibility, and applicability of training.

Applications of highly qualified individuals are then turned over to the selection board for assessment of their academic and professional experience and references, plus a review by JSC flight surgeons of applicants' medical forms. The overall rating effort is expected to produce about 100 top candidates.

-more-

Beginning this month, the top-rated applicants will be invited to JSC in groups of about 20 for interviews and medical evaluations. In this final phase of screening leading to the selection, applicants will be evaluated for such qualities as adaptability, communication skills, and teamwork.

In addition to being sized up by NASA flight surgeons and members of the board, applicants will have a chance to learn something more about the jobs they are seeking through orientation briefings and tours.

"We really want to pick people who know what they're signing up for," said Steve Hawley, Deputy Chief of the Astronaut Office and a member of the selection board. "We encourage them while they're here to meet and talk with as many current astronauts as they can."

The most common question, according to Hawley, seems to be how their time would be spent should they be selected. "One of the biggest misconceptions is the extent to which it is a program support job. Most think that they'll be flying and training in simulators much more than they will."

The opportunity to meet and talk with potential new team members is welcomed by current astronauts, said Hawley. "Most people remember what it was like when they applied, and they want to help out."

The first group of applicants is due to arrive at JSC for orientation and interviews the week of September 18.

"We get a little bit smarter about the way we do this, with each selection," said Duane Ross, who expects this year's selection task to be comparable to 1987. The number of applications received for consideration in the 1987 selection was 2,062 with 1,846 meeting minimum qualifications. From 117 interviewees, 15 were finally selected as astronaut candidates.

Current plans are to announce the class of 1990 in January, with the new hires reporting here in July. Like their predecessors, they will be subject to one year of candidate training and evaluation before receiving technical assignments and full astronaut status.

Ross expects this year's effort to produce anywhere from 15 to 20 new top-notch JSC employees.

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For Release

Jeffrey Carr
RELEASE NO. 89-047

September 14, 1989

FIRST GROUP OF PROSPECTIVE ASTRONAUTS TO ARRIVE AT JSC

The first of several groups of prospective astronauts will arrive at the Johnson Space Center on Monday, September 18, to begin a week of orientation, interviews, and medical evaluations.

Approximately 100 of nearly 2500 total applicants are expected to be interviewed here over the next several weeks for a chance to be among the final 15 to 20 who will be named as astronaut candidates in January.

The first group of 20 will consist of Paul J. Bertsch of the Johnson Space Center; Jay C. Buckey, M.D., of Dallas, TX; Leroy Chiao, Ph.D., of Danville, CA; Michael R. Clifford (Maj., USA) of Seabrook, TX; David B. Cripps (Maj., USA) of Edwards, CA; Steven R. Hamel (LCdr, USN) of Ft. Washington, MD; Bernard A. Harris, Jr., M.D., of the Johnson Space Center; David E. Hollowell, Ph.D., of Los Alamos, NM; James A. Jones (LCdr, USN) of Virginia Beach, VA; Michael E. Lopez-Alegria (Lt., USN) of Waldorf, MD; Ellen Ochoa, Ph.D., of the Ames Research Center; Thomas P. Phelan (Lt., USN) of Hollywood, MD; Kent V. Rominger (Lt., USN) of California, MD; James C. Seat (Maj., USAF) of Edwards, CA; Mark D. Shackelford (Maj., USAF) of Edwards, CA; Richard A. Stevens (Maj., USAF) of Edwards, CA; Keith A. Taylor, Sc.D., of Copley, PA; Donald A. Thomas, Ph.D., of the Johnson Space Center; Carl E. Walz (Capt., USAF) of Henderson, NV; and Dorothy J. Zukor, Ph.D., of NASA Headquarters.

Astronaut selections are conducted on a bi-annual basis. The number of candidates selected every two years will vary based on flight rate, program requirements, and attrition.

- more -

NOTE TO EDITORS:

The following non-interference photo opportunities are planned for Monday and Tuesday at the Johnson Space Center. Those who wish to participate should contact Jeffrey Carr, 713/483-5111, for further details.

Mon., Sept. 18:

0645 Press van leaves Bldg 2 for Bldg 37
0700 Astronaut Applicants arrive at JSC, Bldg 37
0720 Press van returns Bldg 2

Tues., Sept. 19:

0930 Press van leaves Bldg 2
1000 Ellington (Applicants familiarization tour)
1100 Bldg 9A/B (Applicants familiarization tour)
1130 Press van returns Bldg 2

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NASA News

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

For Release

Pam Alloway
RELEASE NO. 89-048

September 13, 1989

AMERICAN ASTRONAUTICAL SOCIETY/NASA SET HUMAN FACTORS SYMPOSIUM

NASA and the American Astronautical Society's (AAS) Southwest Section will present "The Manned System - A Human Factors Symposium and Workshop" Sept. 18-21.

Monday's activities will be held 1-4 p.m. at JSC's Gilruth Recreation Center. The day's program will feature Dr. Alphonse Chapanis, president of a human factors consulting company; Lt. Col. Ted Wierzbanski, National Aerospace Plane Program planning director; and former astronaut and U.S. Senator Harrison Schmitt. A panel discussion will follow.

Ben Rich, general manager of Lockheed's "Skunkworks," will speak at a 6 p.m. dinner Monday at Gilruth. Reservations should be made with Bill Armstrong at (713) 488-9005.

Human factors workshops will be held Tuesday through Thursday at the Nassau Bay Hilton and will focus on long-term space habitation and exploration. Participants will develop a space human factors research plan for 1991 through 1995 that will be submitted to NASA to assist in planning future human research programs.

A session will be devoted to each of 10 topics, ranging from "Space Station Mock-up" to "Man-Systems Telerobotics Lab" to a "Computer Man-Modeling Facility." Speakers from NASA, industry, and academia will give presentations on future research directions.

Following the formal sessions, small groups will further discuss each topic area. The discussion groups' conclusions will be presented at the workshop's final session Thursday and participants will outline a research plan.

A detailed plan developed from the group's outline will be presented later this year to NASA sponsors of the workshop.

NASA News

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For Release

James Hartsfield
RELEASE NO. 89-049

September 22, 1989

LAS CRUCES MAN HELPS TURN DESERT TO SPACE HARBOR

They say desire and determination, if they come from the heart, can move mountains, and White Sands Test Facility's (WSTF's) Al Paczynski is living proof -- the strength of his dreams turned a lonely, snow-white desert into a shining homecoming spot for those who leave Earth.

White Sands Space Harbor is as much a part of Paczynski, a Las Cruces resident, as it is a piece of New Mexico or a standard of the space shuttle program. In the mid-1970s, standing on a short, lumpy makeshift runway on the fringe of the White Sands National Monument, he somehow envisioned a Shuttle landing there. On March 30, 1982, he watched it come true with his heart in his throat. No matter who you are or where you're from, you can't listen to him tell it without feeling a streak of pride in it all.

"That landing was the fulfillment of everything I could have ever wanted," he said. "They were actually going to use the place ... for what I wanted to use it for. After the deorbit burn, I knew it couldn't go anywhere else. I finally knew for sure it was going to happen. It had to happen."

Surrounded then by more than 900 journalists from around the globe, by 1,000 VIPs, and watching the world focus on two seven-mile long, gypsum runways, Paczynski was a far cry from that foregone barren desert. Northrup Strip, located on the Army's White Sands Missile Range (WSMR), originally was built by Northrop Aviation Corp. as a landing area for target drones. Called Northrup Strip at first, the name changed due to a typographical error in a widely circulated early press release.

Paczynski, a NASA employee for 25 years, was working with propulsion and radar testing at WSTF in 1976. He was acquainted with 10,000-foot long Northrup Strip through several brief operations NASA had conducted there, among them tests of electronic landing aids and balloon releases.

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"I heard that several pilots were looking for a place to fly the Shuttle Training Aircraft (STA)," he said, "so I contacted them to see if we could get some additional part of the shuttle program here, in New Mexico. It seemed like a good place to do STA activities because they could fly every day of the year. I really had a shuttle landing site as an ulterior motive; Northrup could be expanded."

NASA saw the benefits of conducting STA training at Northrup: the protected air space and eager cooperation of the missile range; the excellent climate; and the close proximity of WSTF and Holloman Air Force Base (HAFB). Holloman personnel provide a professional crash and rescue team for the airfield, among a host of other cooperative tasks.

"It just seemed like a natural," Paczynski said. The decision was made quickly, and the original Northrup Strip was smoothed, widened and lengthened to 15,000 feet by May 1976. The first STA flew there three months later, with astronauts training for the shuttle's Approach and Landing Tests.

"We started out on a real shoestring. It was very primitive," Paczynski said. "We had no control tower; we used an old control cab from an Apollo Lunar Landing Training Vehicle project set on the ground. We borrowed a UHF radio and other communications equipment from the Army. We bought windsocks, and the range installed some phones. We added a porta-potti and we were in business."

In 1978, a second runway was constructed, intersecting the original runway to reduce crosswind problems. Shortly afterward, Northrup was designated as an alternate shuttle landing site, to be used if the lakebed at Edwards Air Force Base in California was wet. Both runways were lengthened to 35,000 feet in 1979 following that decision.

"The nicest thing about operating at Northrup Strip is that it's so easy to build runways," Paczynski said. The area's terrain is simply flat, hard-packed gypsum, and runways basically require only smoothing and marking to be complete, he added.

A towway from the runways to a cement pad outfitted with a 75-ton crane also was built to allow for mating an Orbiter to a 747 carrier. The strip's control cab was raised to become a control tower by setting it atop a scrap Apollo propulsion test stand from WSTF, and Northrup was ready to support STS-1.

Both STS-1 and STS-2 almost launched at times when Edwards' lakebed was wet, but launch slips delayed each and the California runways dried sufficiently.

"It looked like we were never going to get one," Paczynski said. But, five days before the launch of STS-3, a decision was made to land in New Mexico at the end of that mission due to wet conditions at Edwards.

"They couldn't predict when it would dry," Paczynski explained. Preparations began quickly at Northrup for the landing. The convoy equipment from Edwards was shipped to New Mexico by train. Portable buildings and other necessities were brought in courtesy of the Air Force.

"In every part of the airfield you had a massive effort going on to construct facilities," Paczynski said. "We wondered if we were going to be able to pull it off, but we did. There were no delays at all due to assembly of equipment. We were ready."

STS-3's landing was scheduled for March 29, 1982, but a raging dust storm at Northrup caused a one-day wave off. But at 9:05 a.m. the next day, Columbia landed. A subsequent bill put forth in Congress by then U.S. senator from New Mexico and former Apollo astronaut Jack Schmitt changed Northrup Strip's name to White Sands Space Harbor. Also, an engraved survey monument was set at the point where astronauts Jack Lousma and Gordon Fullerton met their families and the spot was named "Columbia Site" by Major General Alan Nord, head of WSMR.

No other shuttle landing has been made at WSSH, and the landing field's flight role had diminished some following the first missions and the advent of landings on concrete runways at Edwards and Florida's Kennedy Space Center. But, for the return-to-flight in 1988, WSSH was again designated the prime alternate landing site for the Shuttle, a role it retains today.

Several modifications were made to WSSH during the 32 months following the Challenger accident, including laser-smoothing of the main runway and a new mating and servicing area located away from areas threatened by blowing sand, a problem experienced during STS-3, Paczynski said. This year, a third runway, an almost exact duplicate in size and appearance to the runway at Ben Guerir, Morocco, was built to allow astronauts to train for Trans-Atlantic Abort Landings (TALs).

Although only one shuttle has landed there, WSSH always has been an indispensable training field, scheduling an average of 10 STA sessions a week for use by up to three planes flying concurrently. The STAs are Grumman Gulfstream II aircraft that have been highly modified to mimic the flight characteristics of the Shuttle during landing, and training flights simulate the descent of the Shuttle from 10,000 feet to touchdown. The planes used at WSSH are housed in NASA facilities at the El Paso International Airport.

The Space Harbor operates for two shifts daily and is staffed by 17 Lockheed Engineering and Science Corp. technicians, two quality assurance personnel, five Holloman crash and rescue team members, and four Kennedy Space Center employees. The KSC workers maintain WSSH's convoy equipment, machinery that was transferred to WSSH from the halted Vandenberg launch complex.

WSSH's future assignments may include roles as a recovery site in the Reusable Reentry Satellite Project, the Crew Emergency Return Vehicle Project and the National Aerospace Plane Program, Paczynski said. But roles as the prime training ground and an alternate and contingency landing site for Shuttle pilots will remain top priority.

Training is done both day and night at WSSH, thanks to lights that can blare a total of more than 11 billion candlepower across the desert.

"At night, it really looks fantastic, like a Christmas tree," Paczynski said. "There are red and white PAPI (Precision Approach Path Indicator) lights. There are strobes flashing. There are approach lights that are white, reflectors that are yellow, blue distance-to-go lights, almost every color you can think of.

"This place has been a bomb drop area; it's been any number of things," Paczynski added. "I think its highest use has been as a spaceport."

Kelly Humphries
Release No. 89-050

September 29, 1989

RESEARCHERS EVALUATE ETHNIC FOODS FOR USE IN SPACE

The ultimate in take-out food -- when it goes into orbit you might even call it way-out take-out food -- may be assuming a more international flavor in the future.

When astronauts are living aboard Space Station Freedom, at a lunar base or on a ship headed toward Mars, they may be able to dine on regional delicacies from France, Russia, Canada, Japan and other countries as a result of a research project now filling the Food Systems Laboratory at Johnson Space Center (JSC) with tantalizing aromas from around the world.

Dr. Selina Ahmed, an associate professor of human nutrition at Texas Southern University, is principal investigator for the International Food Patterns for Space Foods research project that is looking at the taste, aroma, nutritional value and packaging of ethnic cuisine from a variety of countries.

The program, funded through JSC's Equal Employment Opportunity Office, is expected to play a role in providing nutrition research for space explorers of different ethnic backgrounds, she said.

"Our main purpose is to enhance morale with familiar foods," said Ahmed, a native of Bangladesh. The research effort is divided into four basic tasks.

The first task, Ahmed said, was identification of the dietary patterns to be studied, based on the nationalities of astronauts who have flown in space and who are expected to fly on space station as international partners. She and her army of tasters started with French and Russian foods and plan to move on to Japanese and German foods this month. Eventually she aspires to study the dietary patterns of every country in the world.

The next research task was evaluation of food items from the identified dietary patterns. The researchers randomly selected dishes from several dietary patterns and began taste tests.

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For the first round of taste tests, Ahmed said, she and graduate assistant Pauline Cornish and undergraduate assistant Amanda Cox prepared 38 Russian food items and at least 35 French and Canadian food items. These were evaluated on the standard Food Systems Laboratory's score sheets by JSC volunteers with the appropriate ethnic background or experience with foreign foods. Last Friday, the test kitchen was brimming with Japanese dishes.

The food items fall into categories of salads, soups, entrees and desserts. Some of the French dishes tested were French onion soup, veal scallops with crab and broccoli, fresh peas braised with onion and lettuce, and braised red cabbage in red wine with chestnuts. Russian dishes included Turkmenian pilaf with chicken, Caucasian lamb stew, borsch and kapoosta. Japanese dishes included shrimp tempura, fried lotus root and sushi.

Task three involves packaging and shelf-life studies. The foods that are approved by the taste-testing panels will be packaged, stored and tested at three-month, six-month and nine-month intervals. If they pass the storage test, they can be recommended for acceptance into the Space Nutrition Program, which will assess the dishes' nutritional value. Ahmed said her group hopes to make its first recommendations in May.

Dr. Charles Bourland, subsystem manager for space station food and the grant monitor, said the broad purpose of the research is to find some foods that are internationally acceptable, that astronauts from any country can enjoy. The idea, he said, is to develop a more standardized selection of menu items from which astronauts may make their selections. This would reduce the need to develop individual menus for each astronaut or crew he said, adding, however, that he suspects some catering to individual tastes will still be necessary.

Ahmed said her research also should help diet-oriented members of the astronaut health care team better understand and assist patients from other cultures during illness. The data should be useful to those who develop food plans for long-duration flights involving manned missions to Mars and the establishment of lunar colonies.

As the research project intensifies, she said, it will begin to explore the adaptability of plant varieties common to ethnic food groups to closed loop ecological systems, which are being studied for use on long-duration spaceflight.

Note: NASA photographs are available in conjunction with the release. Contact the Still Photo Library, 483-8603, and ask for photos S89-45615, S89-45618 and S89-45619.

NASA News

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September 28, 1989

Jeffrey Carr
RELEASE NO. 89-051

SECOND GROUP OF ASTRONAUT HOPEFULS TO ARRIVE AT JSC

The second of an expected five groups of astronaut applicants will arrive at the Johnson Space Center for orientation, medical evaluations, and interviews on Monday, October 2. Each group consists of about 20 individuals who have a chance to be one of 15 to 20 finally selected as astronaut candidates in January.

The group consists of USAF Capt. Mark E. Almquist of Lancaster, CA; Kenneth Cockrell of the NASA Johnson Space Center in Houston, TX; USAF Maj. Eileen M. Collins of Edwards AFB, CA; Javier de Luis, Ph.D., of Cambridge, MA; Dean B. Eppler, Ph.D., of Las Vegas, NV; USAF Maj. Lance C. Grace of Holloman AFB, NM; USAF Capt. William G. Gregory of Edwards AFB, CA; John M. Grunsfeld, Ph.D., of Pasadena, CA; Butler P. Hine III, Ph.D., of Cupertino, CA; Benjamin D. Levine, M.D., of Dallas, TX; Thomas P. Moore, M.D., Ph.D., of Minneapolis, MN; David A. Noever, Ph.D., of Huntsville, AL; USAF Capt. Mark L. Polansky of Niceville, FL; USAF Capt. Mark W. Stephenson of Newburgh, NY; William C. Stone, Ph.D., of Derwood, MD; USN LCdr. Sharon K. Wallace of Bonita, CA; USMC Maj. Terrence W. Wilcutt of Patuxent River, MD; USAF Maj. Robert J. Wood of Niceville, FL; Albert Yen of the NASA Jet Propulsion Laboratory in Pasadena, CA; and USMC Capt. Peter E. Yount of Lexington Park, MD.

Applicants receiving interviews were chosen from nearly 2500 total applications received prior to the June 30 deadline. Those received after the deadline are eligible for consideration for the next selection in 1992.

The number of candidates selected every two years will vary based on flight rate, program requirements, and attrition.

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NASA News

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For Release
September 29, 1989

Jeffrey Carr
RELEASE NO. 89-053

ASTRONAUTS NAMED TO SHUTTLE CREWS: STS-39 (IBSS), STS-41 (ULYSSES), STS-45 (ATLAS-01), STS-46 (TSS-1), STS-47 (SL-J)

Astronaut crew assignments have been made for five Space Shuttle missions in late 1990 and early 1991, including the first assignments from the astronaut class of 1987, the first U.S. Coast Guard astronaut to fly, the first European Space Agency (ESA) astronaut to be named as a mission specialist, and the first black woman to be selected for space flight.

The crew of STS-41, set for October of 1990, will be commanded by USN Capt. Richard N. Richards. USMC Lt. Col. Robert D. Cabana has been named as pilot. Mission specialists are USN Capt. William M. Shepherd, USCG Cmdr. Bruce E. Melnick, and USAF Maj. Thomas D. Akers. Melnick and Akers will become the first of the astronaut class of 1987 to fly in space. At an orbital altitude of 160 miles, the crew of Atlantis will deploy the space probe ULYSSES on its way to a major solar science harvest in polar orbit around the sun.

USN Capt. Michael L. Coats will command the crew of Discovery on STS-39, an unclassified Department of Defense mission scheduled for November of 1990. The pilot will be USAF Maj. L. Blaine Hammond, Jr. Mission specialists are Gregory J. Harbaugh and USAF Maj. Donald R. McMonagle. Previously assigned as mission specialists for the flight are USAF Col. Guion S. Bluford, Jr., Richard J. Hieb, Ph.D., and Charles Lacy Veach. During the eight-day mission, the crew will deploy, rendezvous, and retrieve the free-flying Infrared Background Signature Survey (IBSS), a sensor experiment to gather signature data on a variety of infrared, visible, and ultraviolet sources.

Kathryn D. Sullivan, Ph.D., and C. Michael Foale, Ph.D., have been named as mission specialists for the Atmospheric Laboratory for Applications and Science (ATLAS-01) mission, STS-45. In March of 1991, the crew of Columbia will spend nine days in orbit conducting studies of the sun and of the Earth's atmosphere in efforts to better understand the effect of solar activity on the Earth's climate and environment.

ATLAS-01 payload specialists Michael L. Lampton, Ph.D., of the University of California at Berkley, and Byron K. Lichtenberg of Payload Systems, Inc. were named in 1984. Additional crew members will be announced later.

In another partial crew assignment, USN Cmdr. Robert L. "Hoot" Gibson has been named to command the crew of STS-46. NASA astronauts Jeffrey A. Hoffman, Ph.D., and Franklin R. Chang-Diaz, Ph.D., plus Claude Nicollier, a European Space Agency (ESA) astronaut assigned to NASA, have been named to fly as mission specialists. During their seven-day mission, the crew of Atlantis will deploy the European Retrievable Carrier (EURECA), a ESA-sponsored free-flying science platform which will be retrieved and returned to Earth eight months later. This first flight of the EURECA features five multi-user facilities serving some 45 principle investigators in the materials and life sciences. In addition, the crew will demonstrate the Tethered Satellite System (TSS), a joint project between NASA and the Italian space agency, Agenzia Spaziale Italiana (ISA). The Shuttle-attached TSS will provide for the deployment, operation, and retrieval of a data gathering probe, through the use of a tether system which provides constant physical and electrical connection and RF communication between the probe and the Shuttle. Additional crew members will be named later.

Mission specialists have also been named to the STS-47 crew for Spacelab-J, a joint venture between the United States and Japan to conduct experiments in life sciences and materials processing. USAF Lt. Col. Mark C. Lee, N. Jan Davis, Ph.D., and Mae C. Jemison, M.D., will fly aboard Discovery on that mission in June of 1991. Jemison, assigned as a payload specialist, becomes the first black woman to be selected for a space flight. Other crew members will be named later.

STS-41

Richards, who will make his second space flight, his first as a commander, flew as pilot on STS-28. He was born August 24, 1946, in Key West, FL, but considers St. Louis, MO, his hometown.

Cabana will make his first flight in space. He was born January 23, 1949, in Minneapolis, MN.

Shepherd will make his second flight, having flown as a mission specialist on STS-27. He was born July 26, 1949, in Oak Ridge, TN.

Melnick will make his first space flight. He was born December 5, 1949, in New York, NY, but considers Clearwater, FL, his hometown.

Akers will make his first flight in space. He was born May 20, 1951, in St. Louis, MO, but considers Eminence, MO, his hometown.

STS-39

Coats makes his third space flight, his second as commander. He flew previously as pilot of STS-41D and as commander of STS-29. Coats was born January 16, 1946, in Sacramento, CA, but considers Riverside, CA his hometown.

Hammond will make his first flight. He was born January 16, 1952, in Savannah, GA.

McMonagle, selected in 1987 as a pilot, will make his first flight as a mission specialist. He was born May 14, 1952, in Flint, MI.

Harbaugh will also make his first flight in space. He was born April 15, 1956, in Cleveland, OH, but Willoughby, OH, is his hometown.

STS-45

Sullivan, currently in training for her second space flight, STS-31, will make her third flight. She flew previously as a mission specialist on STS-41G. Sullivan was born October 3, 1951, in Paterson, NJ, but considers Woodland Hills, CA, her hometown.

Foale, an American citizen born in England, will make his first flight in space. He was born January 6, 1957, in Louth, England, but considers Cambridge, England, his hometown.

STS-46

Gibson, making his fourth flight, has flown previously as pilot on STS-41B, and as commander on STS-61C and STS-27. He was born October 30, 1946, in Cooperstown, NY, but Lakewood, CA, is his hometown.

Hoffman, who will make his third flight, is currently in training for his second Shuttle mission, STS-35. He also flew as a mission specialist on STS-51D. Hoffman was born November 2, 1944, in Brooklyn, NY, but considers Scarsdale, NY, his hometown.

Chang-Diaz, currently preparing for Shuttle mission STS-34, will make his third flight also. He flew previously as a mission specialist on STS-61C. Chang-Diaz was born April 5, 1950, in San Jose, Costa Rica.

Nicollier, making his first flight, will be the first ESA astronaut to fly as a mission specialist. Under a special agreement between NASA and ESA, he was assigned to receive mission specialist training at NASA in 1980. He was born September 2, 1944, in Vevey, Switzerland.

STS-47

Lee flew as a mission specialist on STS-30, and will make his second flight in space. He was born August 14, 1952, in Viroqua, WI.

Davis, making her first space flight, was born November 1, 1953, in Cocoa Beach, FL, but considers Huntsville, AL, her hometown.

Jemison will make her first flight in space. She was born October 17, 1956 in Decatur, AL.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
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For Release

October 4, 1989

Brian Welch
Release No. 89-054

FLIGHT CONTROL OF STS-34

Flight control for STS-34, the thirty-first voyage of the Space Shuttle, will follow the same procedures and traditions common to all U.S. manned space flights since the Mission Control Center was first used for Gemini IV in 1965.

As on past flights, responsibility for conduct of the mission will revert to the Mission Control Center (MCC) in Houston once Atlantis' two solid rocket boosters ignite. Mission support will begin in the MCC about five hours prior to launch and will continue around the clock through the landing and post-landing activities.

The mission will be conducted from Flight Control Room One (FCR-1) on the second floor of the MCC, which is located in Bldg. 30 at Johnson Space Center.

All of the traditional hallmarks of Shuttle missions will be available to news media covering the flight. Throughout the mission, NASA will continue its practice of providing around-the-clock, live release of air-to-ground transmissions between the spacecraft and the MCC. Live views of the activities within FCR-1, alternating with views of the large situation map in Mission Control, will be fed continuously on NASA Select television.

NASA also will hold change-of-shift press conferences with offgoing flight directors, approximately every eight hours, as warranted by mission events and media interest. The press conferences will originate from JSC's News Center in Bldg. 2, Room 135, and will be carried live on NASA Select, with two-way question and answer capability available at NASA Headquarters, Kennedy Space Center, the Marshall Space Flight Center and the Dryden Flight Research Facility.

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As in the past, three teams of flight controllers will alternate shifts in the control center and in nearby analysis and support facilities at JSC. The handover between each team takes about an hour and allows each flight controller to brief his or her oncoming colleague on the course of events over the previous two shifts. Change-of-shift press conferences generally take place 30 minutes to an hour after the shift handovers have been completed.

The three flight control teams are referred to as the Ascent/Entry-Orbit 1, Orbit 2 and Planning teams. Generally, the STS-29 crew's working day is split between the Orbit 1 and Orbit 2 shifts.

For STS-34, the ascent phase will be conducted by Flight Director Ronald D. Dittemore. Once Atlantis is in orbit, this same shift, operating from about 6:30 a.m. to 3:30 p.m. CDT each day, is known as the Orbit 1 team and also will be led by Flight Director Dittemore. Because the shifts overlap in this manner, some of the flight control positions will be staffed by the same personnel for both Ascent/Entry and Orbit 1 operations. Other positions will alternate between specialists in launch/landing activities and orbital operations.

The Orbit 2 team, led by Lead Flight Director Milt Heflin, will be on-console each day from around 2:30 to 11:30 p.m. CDT. The Orbit 2 team has primary responsibility for the deploy of the Galileo spacecraft on Flight Day One.

The Planning Team, led by Flight Director Robert E. Castle, Jr., will be on-console from about 10:30 p.m. to 7:30 a.m. CDT each day. The Planning shift, which for the most part operates during the crew's sleep period, has the dual responsibility for monitoring the systems aboard Atlantis and updating schedules or coordinating any changes in the flight plan as may be dictated by real-time mission events.

MCC POSITIONS AND CALL SIGNS FOR STS-34

The flight control positions in the Mission Control Center, their call signs and their functions are:

Flight Director (FLIGHT)

Has overall responsibility for the conduct of the mission.

Spacecraft Communicator (CAPCOM)

By tradition an astronaut; responsible for all voice contact with the flight crew.

Flight Activities Officer (FAO)

Responsible for procedures and crew timelines; provides expertise on flight documentation and checklists; prepares messages and maintains all teleprinter traffic to vehicle.

Integrated Communications Officer (INCO)

Responsible for all Orbiter data, voice and video communications systems; monitors the telemetry link between the vehicle and the ground; oversees the uplink command and control processes.

Flight Dynamics Officer (FDO)

Responsible for monitoring vehicle performance during the powered flight phase and assessing abort modes; calculating orbital maneuvers and resulting trajectories; and monitoring vehicle flight profile and energy levels during reentry.

Electrical, Environmental & Consumables Manager (EECOM)

Responsible for all life support systems, power management, heating and cooling systems, transducers and vehicle lighting; monitors fuel cells; manages consumables.

Payloads Officer (PAYLOADS)

Coordinates all payload activities; serves as principal interface with remote payload operations facilities.

Data Processing Systems Engineer (DPS)

Responsible for all onboard mass memory and data processing hardware; monitors primary and backup flight software systems; manages operating routines and multi-computer configurations.

Propulsion Engineer (PROP)

Manages the reaction control and orbital maneuvering thrusters during all phases of flight; monitors fuel usage and storage tank status; calculates optimal sequences for thruster firings.

Booster Systems Engineer (BOOSTER)

Monitors main engine and solid rocket booster performance during ascent phase.

Guidance, Navigation & Control Systems Engineer (GNC)

Responsible for all inertial navigational systems hardware; monitors radio navigation and digital autopilot hardware systems.

Ground Controller (GC)

Coordinates operation of ground stations and other elements of worldwide space tracking and data network; responsible for MCC computer support and displays.

Maintenance, Mechanical, Arm & Crew Systems (MMACS)

Formerly known as RMU; responsible for remote manipulator system; monitors auxiliary power units and hydraulic systems; manages payload bay and vent door operations.

EVA Specialist (EVA)

A specialty position, activated for planned or contingency extra-vehicular activity; operates from the MMACS console; monitors timeline and all preparations leading up to an EVA; monitors spacesuit parameters and provides ready reference on procedures during an EVA.

Flight Surgeon (SURGEON)

Monitors health of flight crew; provides procedures and guidance on all health-related matters.

Public Affairs Officer (PAO)

Provides real-time explanation of mission events during all phases of flight.

STS-34 FLIGHT CONTROL TEAM STAFFING

| Position | Ascent/Entry | Orbit 1 | Orbit 2 | Planning |
|----------|---|-------------------------------------|----------------------------------|---|
| FLIGHT | Ron Dittmore | Ron Dittmore | Milt Heflin | Bob Castle |
| CAPCOM | Frank Culbertson (A) Ken Cameron (E) | Ken Cameron (P) Steve Oswald (B) | Mike Baker (P) James Voss (B) | Tammy Jernigan (P) Don McMonagle (B) |
| FAO | Stephen S. Gibson | Stephen S. Gibson | Karen Engelauf | Nancy Jackson |
| INCO | Harry Black | Harry Black | Jay Conner | Edgar B. Walters |
| FDO | Bruce Hilty (A) Ed Gonzalez (E) | Timothy Brown | Matthew R. Abbott | P.J. Burley |
| EECOM | Charles W. Dingell | Charles W. Dingell | Robert Armstrong | Ray O. Miessler |
| PAYLOADS | J. Mark Childress | J. Mark Childress | Neilan E. Cook | David C. Schurr |
| DPS | Roberto S. Galvez | Roberto S. Galvez | Terry W. Keeler | Burt F. Jackson |
| PROP | Richard D. Jackson | Richard D. Jackson | Sarah A.V. Kirby | Lonnie J. Schmitt |
| BOOSTER | Tom Kwiatkowski | ////// | ////// | Michael M. Dingler |
| GNC | Jeffrey Bantle | Jeffrey Bantle | Charles Alford | Linda Patterson |
| GC | John Snyder John Wells | Larry Foy Jay Conditt | Chuck Capps Norm Talbott | P. Barsten V. Lucas |

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STS-34 FLIGHT CONTROL TEAM STAFFING
(Continued)

| Position | Ascent/Entry | Orbit 1 | Orbit 2 | Planning |
|----------|------------------|------------------|------------------|---------------------|
| MMACS | James W. Medford | James W. Medford | Paul F. Dye | William C. Anderson |
| SURGEON | Phil Stepaniak | John Schulz | Richard Jennings | ////// |
| PAO | Billie Deason | Jeff Carr | Brian Welch | Kyle Herring |

(A) = Ascent; (E) = Entry
(P) = Prime ; (B) = Backup

NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
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For Release

Pam Alloway
RELEASE NO. 89-055

October 12, 1989

PRIVATE MEDICAL TALK POLICY SET FOR SPACE MISSIONS

Medical consultations between astronauts in space and NASA physicians on earth will become a routine part of future Space Shuttle flights to help improve the understanding and provide timely treatment of initial space motion sickness symptoms.

A private medical communication (PMC) will be scheduled between Shuttle crew members and Mission Control Center flight surgeons during the pre-sleep periods on the first two days of each flight beginning with STS-34 this month. Additional consultations may be requested by either the crew or the flight surgeons.

"The communication will assure the most effective treatment of space motion sickness symptoms during the first two days of flight when the condition is most prevalent," said Dr. Jeff Davis, chief of JSC's Medical Operations Branch.

"While symptoms vary from one person to another," Davis said, "most cases are mild and constitute little more than an inconvenience to the crew member. Given the variation in symptoms and available treatments, we felt it would be useful to plan routine consultations for the first two days of each mission."

The consultations will be confidential because of the physician-patient relationship and privacy laws. If a crew health problem is determined to affect a mission adversely, the flight surgeon will prepare a statement for public release which addresses the nature, gravity and prognosis of the situation. Information beyond that required to understand mission impact will not be released.

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NASA News

National Aeronautics and
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Lyndon B. Johnson Space Center
Houston Texas 77058
AC 713 483-5111

For Release:

James Hartsfield
RELEASE NO. 89-056

October 12, 1989

ODOR PANEL SNIFFS OUT PROBLEMS SO ASTRONAUTS DON'T

When success smells sweet onboard a Space Shuttle, it is in large part due to noses in the New Mexico desert that sniffed it first.

The "odor panel" at the Johnson Space Center's White Sands Test Facility (WSTF), located near Las Cruces, New Mexico, is a group of about 20 volunteers who ensure that America's manned space program doesn't stink. All materials that go into the Shuttle's crew compartment must pass these noses before they make it to space.

It's not as strange as it sounds, or maybe it is -- but it's an indispensable test. A bad odor permeating an enclosed cabin for several days can become unbearable, and it could be a catalyst for motion sickness. It also could distract crew members from the business at hand, business that is too critical and valuable for such avoidable distractions.

The importance of such testing can be underscored by a Soviet incident in 1976. During the Salyut 5/Soyuz 21 spaceflight, cosmonauts experienced an unbearable acrid odor coming from their environmental control system and were forced to return to Earth before completing their mission.

In a NASA incident, the odor panel prevented a serious odor problem from occurring on Apollo 13. The charts and maps printed for that flight were tested by the sniffers only a short time prior to launch, and a new ink used by the printer on them caused blisters in the noses of all five testers. Even though the maps had been checked for toxicity, "the human nose is so much more sensitive than the analytical equipment we had at the time that the machines couldn't detect it," said Harry Johnson, manager of WSTF's Analytical, Chemical and Environmental Lab.

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Materials that will go into the Shuttle's crew compartment first are checked thoroughly for toxicity and various other properties before they go under the volunteer noses. The more refined analytical equipment of today has virtually eliminated instances akin to Apollo 13, but the odor panel, whose insignia is a large-nosed skunk, can eliminate items if they find them objectionable. The job is serious, and those who conduct it and participate in it are proud of their work.

"Even though it is a volunteer project, I enjoy doing it," said Bobby Gomez, an odor panel veteran of the past 18 years. "It goes for a good cause, so that the astronauts can feel comfortable that someone's tested it all. I wouldn't want them to go through a problem."

It also is now a tradition -- the odor panel has been in existence since 1967. Literally every item that has flown in the crew cabins of NASA spacecraft since that time has passed the nosy examination.

All told, the odor panel may have smelled as many as 6,000 materials in its 22-year history, Johnson said. "The testing is set up for the safety of the human volunteers," he explained. "The human nose is very sensitive to some compounds and very insensitive to others. There's no substitute for its observations."

Currently, an average of nine materials are tested each week at WSTF, three in each of three sessions. A typical assortment may include adhesives, fabrics, potting compounds, plastics, paint, inks, shaving lotion or deodorant, Johnson said.

"Most of the time it is a material that we test, something that will be used as a component of something else," added Betty Hoffman, odor panel test conductor. "But every once in a while you get a glove, a razor, something recognizable."

The odor panel volunteers are all WSTF workers with less unusual forms of every day work. "I think it's a break from the routine for them," Hoffman said. "It's something worthwhile. It's a direct contribution to the shuttle program, something you can do personally."

Noses are given extra care on the day a test will be conducted: volunteers don't smoke that day, don't chew gum and don't wear heavy perfume or cologne. They don't eat anything for a half-hour prior to the test. The tests are conducted early in the day, so noses will be fresh from a good night's sleep.

Just to get to that point, to be selected for the odor panel, isn't easy. You have to be a bit gifted in the olfactory department. Members must go through a nose calibration every four months, sniffing a set of 10 odor samples: seven standard odors and three of only water. Members must be able to isolate the odorless water samples.

"Some people just can't pass that test, something is lacking in their sense of smell," Johnson said. "It's really not something you can train, you either have it or you don't."

The day of a test, noses are again calibrated on three samples: two with standard, distinct odors and one of water.

The tests are conducted in a special room protected from pervasive outside smells, and five sniffers grade each sample independently. The samples are subjected to the same heat and humidity they will experience aboard the shuttle and sealed in a glass jar, from which a sample sniff is drawn for each member. The grading scale includes "not detectable," "barely detectable," "easily detectable," "objectionable" and "irritating." A sample will fail the test if the average of all five sniffers falls halfway or more between an "easily detectable" and an "objectionable" rating, Johnson said.

"Normally, the ratings given by the individual odor panel members are very close, although they often differ slightly. That's why we do five people and take an average," he added. "People are very subjective on what smells objectionable, some are more acute than others. And the odor panel attempts to match the variety of sensitivities you would find among astronauts and everyone else."

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October 12, 1989

Kelly Humphries
RELEASE NO. 89-057

SYMPOSIUM TO FOCUS ON SCIENCE AND TECHNOLOGY CAREERS FOR BLACKS

Johnson Space Center and the Center for the Advancement of Science, Engineering and Technology (CASET) will sponsor the second annual black Symposium on Science and Technology Careers, Oct. 18-20, at JSC's Gilruth Recreation Center.

The symposium will consist of presentations on recruitment and retention strategies, and educational opportunities, relating to science and technology careers for blacks, according to Dr. Nina W. Kay, CASET Principal Investigator. This is the fifth symposium in a series addressing the needs of minorities and women in high-tech education and employment.

Dr. Julian H. Earls, Director of Health Services, NASA Lewis Research Center, will be the keynote speaker at the 8:15 a.m. Wednesday, Oct. 18, opening session. This session in the ballroom of the Gilruth Center will be open only to conference participants.

CASET is currently studying factors related to the underrepresentation of minorities and women in science and technology career fields, as well as recruitment and retention strategies. CASET is funded by the Department of Defense, and receives support from NASA and the Department of Labor.

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For Release:

Kari Fluegel
Johnson Space Center
(713) 483-5111

Oct. 13, 1989
~~Immediate~~

Release No: 89-058

JSC'S INTELLIGENT TUTORING SYSTEM ENHANCES HIGH SCHOOL PHYSICS

In the midst of a busy classroom, a physics student watches his computer flash to life.

"A roller coaster moves along a horizontal surface and is observed to slow from 20 m/s to a stop in a distance of 50.0m. What acceleration did the roller coaster experience?"

The student slides the computer's mouse across his desk, selecting formulas and inserting values, when a beep sounds and the moustached face of one of the system's designers appears on the screen to coach him through a rough spot.

The student then continues with his calculations, solves the problem and moves on to the next.

NASA technology is at work once again, this time in the classroom.

The Intelligent Tutoring System helping the student through the roller coaster problem is one of eight technology spinoffs under development through JSC's Technology Utilization Office. The system adapts to high school physics the artificial intelligence technology used to train flight controllers.

In the past, classroom computers have been used primarily for drill and practice.

"Like a teacher's helper holding up flash cards," said Bowen Loftin, a University of Houston physics professor working on the system in JSC's Software Technology Branch.

The physics tutor focuses on developing students' problem solving skills rather than doing the work for them. It gives guidance, not answers.

After a student accesses the program, thus creating a progress record that the teacher can review later, he or she is

-more-

presented with a physics problem and an illustration to help in visualizing the problem. The student then must identify the type of problem, choose the correct formula and insert the correct values for the variables.

If the student makes a mistake, Loftin's face appears to remind him of the proper problem-solving methods or procedures. If the student needs help, he or she punches a key and may be greeted by a frustrated scream from the computer as the help menu materializes on the screen.

When students have problems in physics classes, the breakdown does not occur in the delivery of concepts but in the problem solving arena where frustration levels are immense, Loftin said.

Beginning students need more coaching to get through the problem solving but in classes of 20 or more students, a teacher does not have enough time to give each student adequate guidance and attention, he said.

It is at that point the tutoring system enters. The system monitors the student and intrudes when appropriate.

The system does not teach concepts and is not designed to take the place of the teacher or the textbook, said Beverly Lee, the Clear Creek High School physics teacher who is assisting the in system's creation.

"It's the next step of technology in the classroom," Lee said.

The project, which is about one year along in a three-year development process, is supported by the Software Technology Branch, JSC's Technology Utilization Office, the University of Houston, Apple Computer's Classroom of Tomorrow, Pennzoil Products Company and the Clear Creek Independent School District.

"I see it as a three-way partnership," Lee said. "It's government, education and industry coming together."

"We have tried to clone ourselves and our philosophy," Loftin said. "It behaves like we (Loftin and Lee) would behave. ... We (system creators) are taking good people and multiplying and magnifying their expertise."

The system was introduced in Lee's classroom briefly at the end of the 1988-89 year. A small group of students provided input for further development during the summer, and the revised edition has been auditioned in front of Lee's Physics I Honors class already this year.

Designers hope the Intelligent Tutoring System will begin to stem the ever-increasing flow of both physics students and teachers from the country's educational system.

During the 1987-88 school year, the most current data, Texas certified only 45 teachers for high school physics in 1,071 school districts across the state, said Clyde Howie, systems

analyst in the Texas Education Agency's division of teacher certification. That number was down from 67 in 1985-86 and from 56 in 1986-87, he said.

"And we don't believe that trend will turn upward," Howie said.

The tutoring system can help educators who are not trained as physics teachers, but who are presently teaching those classes, meet the needs of their students.

"This could be a valuable asset for teachers who know the rudiments of physics, but don't know where to go from there," Lee said.

The system also can address the decreasing numbers of students entering careers in the sciences, math and engineering. Loftin said he loses about 50 percent of his college students in the first semester of his physics course.

"This is my little attempt to reverse that trend," Loftin said.

Lee also expects the system to have a positive impact.

"It enhances understanding and decreases anxiety," she said, "and by enhancing understanding and decreasing anxiety a career in that area doesn't seem so unattainable."

The system will bring intelligent training systems full circle. The first applications of the technology were in the academic circle but were not completely successful, Loftin said. NASA took that technology, improved it and implemented a training system for flight controllers. Now it's returning to academia, and so far is receiving high grades.

"It teaches you a lot," said Vanessa Plumecocq, a senior. "You can have help, if you need it."

The tutoring system builds a model of each student, adapting to individual's abilities, behavior and progress. Students are then able to work at their own pace.

"You don't feel stupid," said Anh-Thu Pham, a junior. "You can ask it questions and you don't feel uncomfortable."

The personal prompting is important to students because when a student makes a mistake, it is not done in front of a peer, Lee said.

"It takes some of the dread and fear away from physics," she said.

The system, however, is not directed only at students who regularly make mistakes.

Chris Bauch, a junior who helped refine the system over the summer, said the individual approach allows a well prepared student to progress rapidly and slower students to work at their own pace without holding others back.

"It'll be very useful as soon as they have them in every class in the future," he said.

Artificial intelligence is the emulation of human capability through computer software and hardware made possible by the recent advances and evolution of microprocessors.

"It is exciting to be a part of a spinoff such as this that has the potential to revolutionize education and training," said Bob Savely, the Software Technology Branch manager of the activity.

The basic knowledge for artificial intelligence has been around since the mid 1950s, but the complexity of the programs prohibited its use outside the realm of research, Savely said.

Now, the more powerful technology is becoming more accessible, making this type of tutoring system available to the general public.

The potential for expansion of the Intelligent Tutoring System is exceptional. Future versions might include video action to provide students with moving examples rather than static pictures and provide students with tools to make measurements, turning the computer into a true laboratory experience.

Also, at least one additional spinoff of the physics tutor already is anticipated.

Loftin said an algebra program was built as part of the physics tutor. That part of the program could be easily produced independently.

"We could have a whole spectrum of products," Loftin said, "then you have the real ability to affect education. I can't think of a better use of NASA technology."

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For Release

Billie Deason
Release No. 89-059

Oct. 13, 1989

M. CONLEY PERRY NAMED CHIEF, QUALITY ASSURANCE DIVISION

A former Hill County resident, M. Conley Perry, has been named Chief of the Quality Assurance Division at NASA's Johnson Space Center in Houston. Perry's organization manages the overall quality assurance functions for manned and unmanned space vehicles.

Perry joined NASA in 1967 as a test engineer in the Power and Propulsion Division. He has held progressively more responsible positions in Flight Crew Operations and Mission Operations Directorates. Since 1987 Perry has been Deputy Chief, Quality Assurance Division.

Perry was born in Mertens, Texas, and formerly was a resident of Hill County, graduating from high school in Frost, Texas. He received a bachelor of science degree in mechanical engineering in 1965 from the University of Texas at Austin.

Perry is married to the former Charlotte Thomas of Houston. They have three children, John, 22, attending Southwest Texas State University, Susan, 20, attending Texas A&M University, and Colin, 14, a student at Hillsboro High School.

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October 19, 1989

Jeffrey Carr
RELEASE NO. 89-060

THIRD GROUP OF ASTRONAUT APPLICANTS DUE AT JSC

A third group of astronaut applicants is due to arrive at the Johnson Space Center for orientation, medical evaluations, and interviews on Monday, October 23. Each of the expected five groups consists of 20-25 applicants with a chance to be one of 15-20 ultimately selected as astronaut candidates in January.

The third group consists of Jonathan N. Adler, M.D., of Oaklawn, IL; Christen M. Anderson, M.D., Ph.D., of San Diego, CA; USAF Maj. Joseph L. Byerly of Edwards AFB, CA; Edward W. Corcoran, Jr., Ph.D., of Easton, PA; USAF Maj. Michael J. Costigan of Edwards AFB, CA; USAF Maj. David W. Eidsaune of Maxwell AFB, AL; Lorna C. Finman, Ph.D., of Newbury Park, CA; Michael E. Fowler, Jr., Ph.D., of the Johnson Space Center; Scott M. Glenn, Sc.D., of Somerville, MA; USAF Maj. James D. Halsell, Jr., of Edwards AFB, CA; USAF Capt. Scott J. Horowitz of Bitburg AB, West Germany; USN Lt. Cmdr. Frederick G. Johnson of NAS Jacksonville, FL; Gregory C. Johnson of Oak Harbor, WA; USAF Capt. Brian L. Jones of Edwards AFB, CA; Thomas D. Jones, Ph.D., of Fairfax VA; William B. Maze, Ph.D., of Houston, TX; Paul D. Ronney, Sc.D., of Princeton, NJ; Allison C. Sandlin, Ph.D., of Fredericksburg, VA; USAF Maj. Richard A. Searfoss of Edwards AFB, CA; John G. Sotos, M.D., of Baltimore, MD; USMC Capt. Mark P. Stucky of Edwards AFB, CA; and USAF Capt. David E. Walker of Edwards AFB, CA.

Interviewees were chosen from nearly 2500 total applicants who registered prior to the June 30 deadline. Applications received after the deadline are eligible for consideration for the next selection in 1992.

The number of candidates selected every two years will vary based on flight rate, program requirements, and attrition.

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For Release

Jeffrey Carr
RELEASE NO. 89-061

October 25, 1989

NOTE TO EDITORS: STS-34 POSTFLIGHT CREW PRESS CONFERENCE

The STS-34 astronaut crew will meet with news media here at the Johnson Space Center on Wednesday, Nov. 1, to discuss the recent mission to deploy the Jupiter probe, Galileo. The event will begin at 1 pm, central time, and consist of a slide and video presentation by the astronauts, followed by questions.

News media are invited to participate on location at JSC in Building 2, room 135, or via two-way audio from NASA Headquarters in Washington, D.C., the Kennedy Space Center in Florida, the Marshall Space Flight Center in Huntsville, Alabama, or the Jet Propulsion Laboratory in Pasadena, California.

Live NASA Select television coverage will be carried on Satcom F2R, transponder 13.

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For Release

Jeffrey Carr
RELEASE NO. 89-062

October 26, 1989
12 p.m. CDT

FOURTH GROUP OF ASTRONAUT HOPEFULS TO BE INTERVIEWED

The fourth of five groups of astronaut applicants will arrive at the Johnson Space Center for orientation, medical evaluations, and interviews on Monday, October 30. Each group consists of between 20 and 25 applicants with a chance to be selected as astronaut candidates in January.

Included in the fourth group are Warren Anderson, M.D., of Boston, MA; USN Cmdr. Joseph C. Antonio of China Lake Naval Weapons Center, CA; USAF Capt. Mitchell B. Clapp of Edwards AFB, CA; Eladio R. Cortes-Ramos, Ph.D., of Acton, MA; USAF Capt. Charles R. Davis of Edwards AFB, CA; Philip L. Engelauf of the Johnson Space Center; USAF Capt. Ivette Falto of Onizuka AFB, CA; USAF Capt. Michael E. Fossum of Nellis AFB, NV; USA Capt. Steven C. Hadley of Wright Army Air Field, GA; USAF Maj. Robert S. Horton of Edwards AFB, CA; USN Lt. Cmdr. John N. Kohut of Miramar NAS, CA; USAF Maj. Norman K. Leonpacher of Eglin AFB, FL; Barry J. Linder, M.D., of Great Barrington, MA; Linda J. Miller of Union City, CA; Simon L. Morris, Ph.D., of Van Nuys, CA; USAF Maj. Douglas M. Moss of Edwards AFB, CA; David A. Noever, Ph.D., of Huntsville, AL; USAF Maj. Charles J. Precourt of the Naval War College, RI; USA Maj. Kevin G. Scherrer of Fort Hood, TX; USA Capt. Nancy Sherlock of the Johnson Space Center; Eugene M. Wells, Ph.D., of Huntsville, AL; and Peter J. K. Wisoff, Ph.D., of Houston, TX.

Interviewees were chosen from nearly 2500 total applicants who registered prior to the June 30 deadline. Applications received after the deadline are eligible for consideration for the next selection, in 1992.

The number of candidates selected every two years will vary based on flight rate, program requirements, and attrition.

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For Release

Steve Nesbitt
Release No. 89-063

November 6, 1989
IMMEDIATE

NOTE TO EDITORS: STS-32 BRIEFINGS, CREW CONFERENCE SET

A series of background briefings and the astronaut pre-flight press conference for space shuttle mission STS-32 set for launch in December, will be held Nov. 13 and 14 at the NASA Johnson Space Center in Houston.

Background briefings will begin at 10 a.m. CST Nov. 13 with a mission overview by the lead flight director. Briefings on the Long Duration Exposure Facility (LDEF) and other Shuttle payloads will follow. The Space Shuttle Discovery's flight, currently scheduled for launch Dec. 18, includes the deployment of a large communications satellite and the capture and return to Earth of the LDEF.

The crew pre-flight press conference is scheduled for Nov. 14 at 9 a.m.

All events will take place in Room 135 of Building 2 at JSC. Briefings will be carried live on NASA Select Television, available on Satcom F2R, transponder 13 at 3960 MHz. Two-way audio, one-way video will be available at some other NASA centers.

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NASA NEWS

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For Release
November 09, 1989

Jeffrey Carr
RELEASE NO. 89-064

FINAL GROUP OF PROSPECTIVE ASTRONAUTS TO ARRIVE AT JSC

The last of five groups of prospective astronauts will arrive at the Johnson Space Center on Monday, November 13, for a week of orientation, interviews, and medical evaluations.

A total of 106 applicants have been chosen for interview and evaluation, and given the chance to be among the final 15 to 20 who will be named as astronaut candidates in late January.

The fifth and final group consists of John J. Barnard, Ph.D., of San Leandro, CA; USMC Capt. Gregory A. Bass of Patuxent Naval Air Test Center, MD; Richard P. Binzel, Ph.D., of Lexington, MA; USAF Maj. Roger U. Bisson of Dyess AFB, TX; USN Lt. Cmdr. Daniel W. Bursch of Naval Post-Graduate School, Monterey, CA; USAF Capt. Susan J. Helms of Medley, Alberta, Canada; USN Lt. Cmdr. Alexander B. Hnarakis of NAS Oceana, VA; Tamara S. Ledley, Ph.D., of Houston, TX; Iris M. Mack, Ph.D., of Boston, MA; USA Maj. William S. McArthur, Jr., of the Johnson Space Center; James D. Miller, Ph.D., of Asbury, NJ; Donald E. Morel, Jr., Ph.D., of Arlington, VA; USAF Maj. Dana D. Purifoy of Edwards AFB, CA; Ronald M. Sega, Ph.D., of Seabrook, TX; USAF Capt. Francis R. E. Shelley of Edwards AFB, CA; James S. Thomas, Ph.D., of Webster, TX; Janice E. Voss, Ph.D., of Houston, TX; Brenda L. Ward, Ph.D., of the Johnson Space Center; USAF Maj. Steven M. Watson of Wright-Patterson AFB, OH; Virginia A. Whitelaw, Ph.D., of the Johnson Space Center; USAF Capt. Edward M. Wilson of Edwards AFB, CA; and David A. Wolf, M.D., of the Johnson Space Center.

Interviewees were chosen from nearly 2500 total applicants who registered prior to the June 30 deadline. Applications received after the deadline are eligible for consideration for the next selection, in 1992.

The number of candidates selected every two years will vary based on flight rate, program requirements, and attrition.

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NASA News

National Aeronautics and
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For Release:

November 20, 1989

Brian Welch
Release No. 89-065

JASMINE NATIVE HONORED FOR DISTINGUISHED GOVERNMENT SERVICE

Tommy W. Holloway, head of Space Shuttle flight operations at NASA's Johnson Space Center, was honored in the nation's capital Sept. 14 with the Meritorious Executive Award, one of the highest awards available to U.S. Government employees.

The Meritorious Executive Award is part of the Presidential Rank Awards, an annual recognition of contributions by selected government officials.

Holloway, a veteran of U.S. space flight operations for more than a quarter century, was recognized as a Meritorious Executive during ceremonies attended by President George Bush. Holloway is the son of Mr. and Mrs. J.A. Holloway of Griffithville, Arkansas. He was born in Jasmine in 1940 and graduated from Griffithville High School in 1958.

Holloway was cited for "his leadership, personal dedication and initiative" throughout his NASA career, which began at the Johnson Space Center in 1963, shortly after he graduated from the University of Arkansas with a B.S. in mechanical engineering.

Holloway's career with NASA began as Project Mercury was winding down, and since has spanned the Gemini, Apollo, Skylab and Space Shuttle programs. Assigned as a Space Shuttle flight director in 1978, Holloway developed the plans and procedures for operating and controlling the Shuttle Orbiters during launch, orbital flight and landing.

Holloway was named Chief of the Flight Director Office in 1985. In January 1986, following the Challenger explosion, he was assigned to lead the Mission Operations Analysis Team as part of NASA's support to the Presidential Commission charged with investigating the accident. Holloway's team contributed to an exhaustive effort to understand how the accident occurred and to determine strategies for a recovery and a return to flight operations.

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Holloway received the NASA Exceptional Service Medal in 1972 for his work on the Apollo 16 lunar landing mission, again in 1982 for his work in planning Shuttle flight techniques, and again in 1988 for his work in support of the Challenger accident investigation. He also received NASA's Outstanding Leadership Medal in 1989 for his role in helping return the Shuttle to flight status following the Challenger accident.

He is married to the former Shirley Ann Shofner of Nacogdoches, Texas, and has three children: Tomas Wesley, of Arlington, Texas; Tonya Ann Post, of King George, Virginia; and Timothy Wayne, who is still at home in Seabrook, Texas.

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NASA News

National Aeronautics and
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For Release

December 14, 1989

Brian Welch
Release No. 89-066

FLIGHT CONTROL OF STS-32

Flight control for STS-32, the thirty-third voyage of the Space Shuttle, will follow the same procedures and traditions common to all U.S. manned space flights since the Mission Control Center was first used in 1965.

Responsibility for conduct of the mission will revert to the Mission Control Center (MCC) in Houston once Columbia's two solid rocket boosters ignite. Mission support will begin in the MCC about five hours prior to launch and will continue around the clock through the landing and post-landing activities.

The mission will be conducted from Flight Control Room One (FCR-1) on the second floor of the MCC located in Bldg. 30 at Johnson Space Center.

Three teams of flight controllers will alternate shifts in the control center and in nearby analysis and support facilities. The handover between each team takes about an hour and allows each flight controller to brief his or her oncoming colleague on the course of events over the previous two shifts. Change-of-shift press conferences with outgoing flight directors generally take place 30 minutes to an hour after the shift handovers have been completed.

The three flight control teams are referred to as the Ascent/Entry-Orbit 1, Orbit 2 and Planning teams. Generally, the STS-32 crew's working day is split between the Orbit 1 and Orbit 2 shifts.

Ascent phase will be conducted by Flight Director Alan L. (Lee) Briscoe. Once Columbia is in orbit, this shift is known as the Orbit 1 shift and will be headed by STS-32 Lead Flight Director Granvil A. (Al) Pennington. Some of the flight control positions will be staffed by the same personnel for both Ascent/Entry and Orbit 1 operations. Other positions will alternate between specialists in launch/landing activities and orbital operations. On the final day of the mission, Briscoe will head the Entry team for Columbia's landing phase.

The Orbit 2 team will be led by Flight Director William D. Reeves.

The Planning Team, which for the most part operates during the crew's sleep shift, will be led by Flight Director Robert E. Castle, Jr.

MCC POSITIONS AND CALL SIGNS FOR STS-32

The flight control positions in the Mission Control Center, their call signs and their functions are:

Flight Director (FLIGHT)

Has overall responsibility for the conduct of the mission.

Spacecraft Communicator (CAPCOM)

By tradition an astronaut; responsible for all voice contact with the flight crew.

Flight Activities Officer (FAO)

Responsible for procedures and crew timelines; provides expertise on flight documentation and checklists; prepares messages and maintains all teleprinter traffic to vehicle.

Integrated Communications Officer (INCO)

Responsible for all Orbiter data, voice and video communications systems; monitors the telemetry link between the vehicle and the ground; oversees the uplink command and control processes.

Flight Dynamics Officer (FDO)

Responsible for monitoring vehicle performance during the powered flight phase and assessing abort modes; calculating orbital maneuvers and resulting trajectories; and monitoring vehicle flight profile and energy levels during reentry.

Electrical, Environmental & Consumables Manager (EECOM)

Responsible for all life support systems, power management, heating and cooling systems, transducers and vehicle lighting; monitors fuel cells; manages consumables.

Payloads Officer (PAYLOADS)

Coordinates all payload activities; serves as principal interface with remote payload operations facilities.

Data Processing Systems Engineer (DPS)

Responsible for all onboard mass memory and data processing hardware; monitors primary and backup flight software systems; manages operating routines and multi-computer configurations.

Propulsion Engineer (PROP)

Manages the reaction control and orbital maneuvering thrusters during all phases of flight; monitors fuel usage and storage tank status; calculates optimal sequences for thruster firings.

Booster Systems Engineer (BOOSTER)

Monitors main engine and solid rocket booster performance during ascent phase.

Guidance, Navigation & Control Systems Engineer (GNC)

Responsible for all inertial navigational systems hardware; monitors radio navigation and digital autopilot hardware systems.

Ground Controller (GC)

Coordinates operation of ground stations and other elements of worldwide space tracking and data network; responsible for MCC computer support and displays.

Maintenance, Mechanical, Arm & Crew Systems (MMACS)

Formerly known as RMU; responsible for remote manipulator system; monitors auxilliary power units and hydraulic systems; manages payload bay and vent door operations.

Rendezvous Guidance and Procedures Officer (RENDEZVOUS)

Monitors onboard navigation of the Orbiter during rendezvous and berthing and advises the control team on the rendezvous profile.

Flight Surgeon (SURGEON)

Monitors health of flight crew; provides procedures and guidance on all health-related matters.

Public Affairs Officer (PAO)

Provides real-time explanation of mission events during all phases of flight.

STS-32 FLIGHT CONTROL TEAM STAFFING

| Position | Ascent/Entry | Orbit 1 | Orbit 2 | Planning |
|----------|--|--|------------------------------------|---------------------------------------|
| FLIGHT | Lee Briscoe | Al Pennington | Bill Reeves | Bob Castle |
| CAPCOM | Mike Baker (A) Frank Culbertson (E) | Tammy Jernigan (P) Frank Culbertson (B) | Steve Oswald (P) James Voss (B) | Don McMonagle (P) Ken Bowersox (B) |
| FAO | Nancy Jackson | Nancy Jackson | Robert Schaf | Jeff Davis |
| INCO | Jay Conner | Jay Conner | Joe W. Gibbs | Roberto Moolchan |
| FDO | Brian Perry (A) Ed Gonzalez (E) | Mark Haynes | Philip Burley | Doug Rask |
| EECOM | Ray Miessler | Ray Miessler | Leonard Riche | Robert Armstrong |
| PAYLOADS | Ben Sellari | Ben Sellari | Nellie N. Carr | Mark Kirasich |
| DPS | Mark Erminger | Mark Erminger | Gloria Araiza | David Tee |
| PROP | Keith Chappell | Keith Chappell | Lonnie Schmitt | Karen Jackson |
| BOOSTER | Mark Jenkins | ////// | ////// | Jerry Borrer |
| GNC | Stephen Elsner | Stephen Elsner | Linda Patterson | Edward Trlica |
| GC | Norm Talbott Larry Foy | Jay Conditt John Snyder | Alfred Davis Chuck Capps | John Wells Joseph Aquino |

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STS-32 FLIGHT CONTROL TEAM STAFFING
(Continued)

| Position | Ascent/Entry | Orbit 1 | Orbit 2 | Planning |
|----------|----------------|----------------|----------------|----------------|
| MMACS | Kevin McCluney | Kevin McCluney | James Anderson | Robert Doremus |
| RNDZ | ////// | James Oberg | John Malarkey | Andy Dougherty |
| SURGEON | Larry Pepper | Denise Baisden | John Schulz | ////// |
| PAO | Brian Welch | Brian Welch | Jeff Carr | Kyle Herring |

(A) = Ascent; (E) = Entry
(P) = Prime ; (B) = Backup

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National Aeronautics and
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Lyndon B. Johnson Space Center
Houston, Texas 77058
AC 713 483-5111

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Dec. 21, 1989

James Hartsfield
RELEASE NO. 89-067

NASA AWARDS CONSTRUCTION CONTRACT AT WHITE SANDS TEST FACILITY

NASA awarded a \$74,000 fixed-price contract to Grijalva Construction Co. of Central, New Mexico, Dec. 21 for construction of a new office building at the White Sands Test Facility (WSTF) near Las Cruces, New Mexico.

The new building will provide office space for an additional 30 employees that eventually will be needed as work with the Space Station Freedom propulsion system progresses. It will be located in one of two propulsion test areas located at WSTF. Construction of the 40-foot by 60-foot pre-engineered facility is scheduled to begin immediately and will be completed by April 30, 1990.

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